UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 29 July 2009

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Chelsea, MA

From: Todd Borci

To: File

On Wednesday, 29 July 2009, EPA inspector Todd Borci conducted a Compliance Sampling Inspection (CSI) of the City of Chelsea, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4"). EPA collected water quality samples from two stormwater outfalls located along the south bank of Mill Creek between Broadway and Parkway Plaza in the City. EPA notified Andy DeSantis, the City's Assistant Director for the Department of Public Works in advance of the inspection.

At approximately 8:30 hours EPA met Andy DeSantis at the site and sampled the Gillooly Road outfall (sample id "Mill2"). This outfall is an approximate 30-inch concrete pipe. EPA noted flow of approximately 10 gallons per minute, a strong musty odor, gray bacterial plaque in the outfall pipe and the rocks below. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated elevated levels of ammonia (6.0 mg/l) and surfactants (0.70 mg/l) in the sample. EPA personnel typically use 0.5 mg/l ammonia and 0.25 mg/l surfactants as threshold level screening concentrations, where sample results equal to or greater than these concentrations may be indicative of illicit discharges. A sample was collected and sent back to the EPA laboratory for enterococcus bacteria.

At approximately 8:40 hours EPA sampled an unnamed outfall (sample id "Mill2a") located approximately 50 yards west of "Mill2". This outfall is an approximate 24-inch concrete pipe in a concrete headwall and appeared to be of recent construction. EPA noted flow of approximately 3 gallons per minute, strong odor with a chemical edge, some suds on water surface, gray and cloudy water, significant (approximately twice amount during 26 May 2009 inspection) gray bacterial plaque within and beneath the outfall pipe. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated elevated levels of ammonia (>6.0 mg/l) and surfactants (0.75 mg/l) in the sample. A sample was collected and sent back to the EPA laboratory for enterococcus bacteria.

Following the inspection, Andy DeSantis notified, by phone and in a letter on 29 July 2009, Federal Realty Investment Trust, the owner of the adjacent property, of DPW's and EPA's observations and findings requesting that they take action to determine cause and eliminate discharge.

Once received from EPA laboratory, the analytical data for this sampling effort will be attached to this report.

The inspection occurred during dry conditions, as according to the National Oceanic and Atmospheric Administration (Logan Airport gauge).

Inspection ended at 9:00. EPA has been and will continue to be in contact with the City of Chelsea and its consultants as follow-up.

Photo 1: 7/29/09 8:40 AM. View of unnamed outfall and "Mill2a" sample location. Note gray bacterial plaque in bottom of outfall pipe and on rocks beneath pipe.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 17 June 2009

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Chelsea, MA

From: Todd Borci

To: File

On Tuesday, 26 May 2009, EPA inspector Todd Borci conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Chelsea, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4"). EPA collected water quality samples from three stormwater outfalls located along the south bank of Mill Creek between Broadway and Parkway Plaza in the City.

At approximately 10:06 hours EPA sampled the Gillooly Road outfall (sample id "Mill2"). This outfall is an approximate 30-inch concrete pipe. EPA noted flow of approximately 5 to 10 gallons per minute, a strong sewage odor, gray bacterial plaque in the outfall pipe, and a small amount of suds beneath the pipe in the receiving water. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated elevated levels of ammonia (3.0 mg/l) and surfactants (1.5 mg/l) in the sample. EPA personnel typically use 0.5 mg/l ammonia and 0.25 mg/l surfactants as threshold level screening concentrations, where sample results equal to or greater than these concentrations may be indicative of illicit discharges.

At approximately 10:45 hours EPA sampled an unnamed outfall (sample id "Mill2b") located approximately 100 yards west of "Mill2". This outfall is an approximate 12-inch concrete pipe in a stone headwall. EPA noted flow of approximately 1 to 2 gallons per minute, a strong sewage odor, gray bacterial plaque beneath the outfall pipe, and the discharge was black and cloudy. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated elevated levels of ammonia (3.0 mg/l) and surfactants (1.0 mg/l) in the sample.

At approximately 11:10 hours EPA sampled an unnamed outfall (sample id "Mill2a") located approximately 50 yards west of "Mill2". This outfall is an approximate 24-inch concrete pipe in a concrete headwall and appeared to be of recent construction. EPA noted flow of approximately 1 gallons per minute, no odor, but gray bacterial plaque within and beneath the outfall pipe. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated elevated levels of ammonia (6.0 mg/l) and surfactants (1.0 mg/l) in the sample.

Following the inspection, EPA notified the Andy DeSantis, the City's Assistant Director for the Department of Public Works of EPA's observations and findings and requested the City investigate the matter.

Once received, the analytical data for this sampling effort will be attached to this report.

The inspection occurred during wet conditions, as according to the National Oceanic and Atmospheric Administration the last measurable precipitation was 0.51 inches on 24 May 2009 (Logan Airport gauge).

Inspection ended at 1200. EPA has been and will continue to be in contact with the City of Chelsea and its consultants as follow-up.

Photo 1: 5/26/09 10:05 AM View facing west – Gillooly Road outfall. Note gray bacterial plaque in bottom of outfall pipe and suds in receiving water. Sample "Mill2" collected at this location.

Photo 2: 5/26/09 10:43 AM. View of sample unnamed outfall and sample location “Mill2b” approximately 100 yards west of “Mill2b”. Note gray bacterial plaque downstream of outfall.

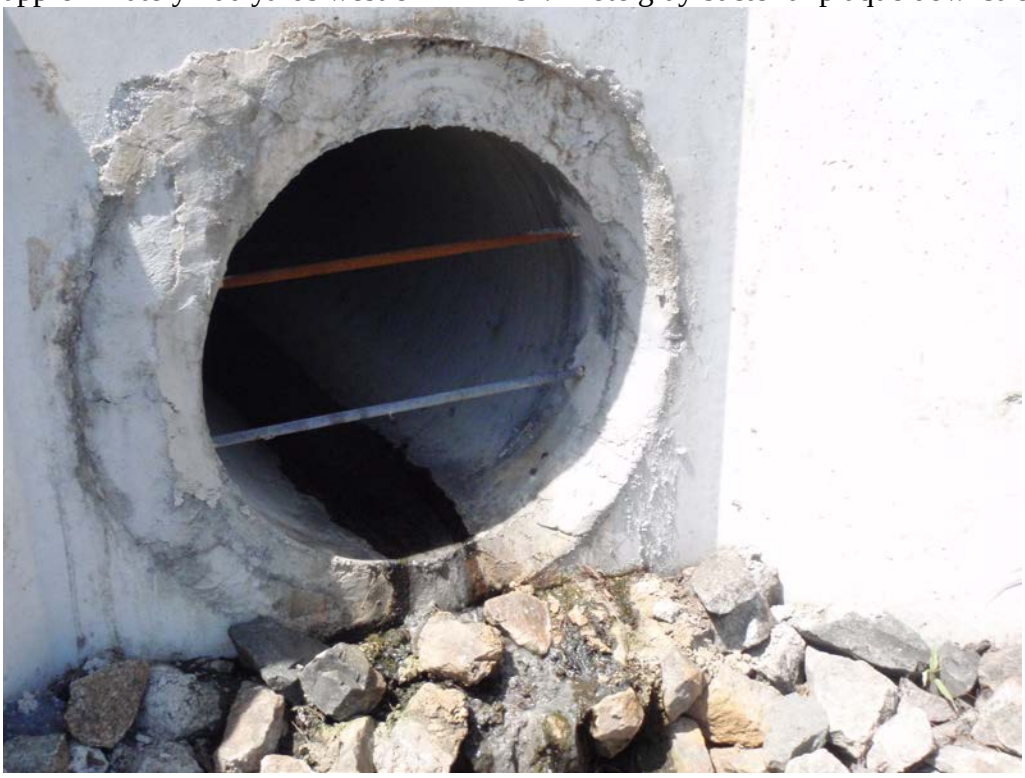

Photo 3: 5/26/09 11:05 AM. View of unnamed outfall and “Mill2a” sample location. Note gray

bacterial plaque in bottom of outfall pipe and on rocks beneath pipe.

5-4-06

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NPDES	yr/mo/day	Inspection Type	Inspector	Fac Type
1 [N] 2 [5]	3 [MAR041077] 11	12 [090728] 17	18 [S]	19 [R]	20 [1]

Remarks

21 [Storm water MS4 Sampling] 66

Inspection Work Days	Facility Self-Monitoring Evaluation Rating	BI	QA	Reserved
67 [01] 69	70 [ ]	71 [ ]	72 [ ]	73 [ ] 74 75 [ ] 80

Section B: Facility Data

Name and Location of Facility Inspected *(For industrial users discharging to POTW, also include POTW name and NPDES permit number)*	Entry Time/Date	Permit Effective Date
City of Chelsea, Massachusetts	0750 7/28/09	5/2003
	Exit Time/Date	**Permit Expiration Date**
	0830 7/28/09	5/2008

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)	Other Facility Data *(e.g., SIC NAICS, and other descriptive information)*
Andrew DeSantis Assistant Director DPW 617-466-4206 500 Broadway Chelsea, MA 02150	

Name, Address of Responsible Official/Title/Phone and Fax Number	Contacted
Same as above	[X] Yes [ ] No

Section C: Areas Evaluated During Inspection *(Check only those areas evaluated)*

[ ] Permit	[ ] Self-Monitoring Program	[ ] Pretreatment	[X] MS4
[ ] **Records/Reports**	[ ] Compliance Schedules	[ ] Pollution Prevention	
[ ] Facility Site Review	[ ] Laboratory	[X] Storm Water	
[ ] Effluent/Receiving Waters	[ ] Operations & Maintenance	[ ] Combined Sewer Overflow	
[ ] Flow Measurement	[ ] Sludge Handling/Disposal	[ ] Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments

(Attach additional sheets of narrative and checklists, including Single Event Violation codes, as necessary)

SEV Codes	SEV Description
[ ][ ][ ][ ][ ]	
[ ][ ][ ][ ][ ]	
[ ][ ][ ][ ][ ]	
[ ][ ][ ][ ][ ]	

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Josh Bonin	US EPA R1 617-918-1358	8/12/09

Signature of Management Q A Reviewer	Agency/Office/Phone and Fax Numbers	Date

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 11 July 2011

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Chelsea, MA

From: Todd Borci

To: File

On Wednesday, 22 June 2011, EPA inspector Todd Borci conducted a Compliance Sampling Inspection (CSI) of the City of Chelsea, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4"). EPA collected water quality samples from two stormwater outfalls located along the south bank of Mill Creek between Broadway and Parkway Plaza in the City. EPA notified Andy DeSantis, the City's Assistant Director for the Department of Public Works, following the inspection.

At approximately 8:50 hours EPA sampled an unnamed outfall (sample id "Mill2a") located approximately 50 yards west of "Mill2" outfall discussed below. This outfall is an approximate 24-inch concrete pipe in a concrete headwall and appeared to be of recent construction. EPA noted flow of approximately 3 gallons per minute, strong odor with a chemical edge, some suds on water surface, gray and cloudy water, and significant gray bacterial plaque within and beneath the outfall pipe. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA processed a surface water sample collected at the location. Field kits indicated elevated levels of ammonia (4.0 mg/l) and surfactants (0.5 mg/l) in the sample. EPA personnel typically use 0.5 mg/l ammonia and 0.25 mg/l surfactants as threshold level screening concentrations, where sample results equal to or greater than these concentrations may be indicative of illicit discharges. A sample was collected and sent back to the EPA laboratory to be analyzed for e. coli and enterococcus bacteria, and selected pharmaceutical compounds.

At approximately 0905 EPA sampled Mill Creek approximately 6 feet upstream of where the discharge from the Mill2A sample location entered the stream. Stream flow was sufficient to ensure the no mixing had occurred between the stream and the Mill2A discharge, and the sample should be considered indicative of upstream conditions. The stream was shallow (<6 inches in depth) and clear during sampling, which occurred on an outgoing tide. The stream is tidally influenced and low tide would occur at approximately 1049 hours. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA processed a surface water sample collected at the location. Field kits indicated no detectable levels of ammonia, elevated levels of surfactants (2.0 mg/l) in the sample, although EPA notes this reading is likely due at

least in part to the salinity of the brackish water during sampling, which was measured at 18.2 parts per thousand. A sample was collected and sent back to the EPA laboratory for analyses for e. coli and enterococcus bacteria, and selected pharmaceutical compounds.

At approximately 9:15 hours EPA sampled the Gillooly Road outfall (sample id "Mill2"). This outfall is an approximate 30-inch concrete pipe. EPA noted flow of approximately 10 gallons per minute, a strong musty odor, gray bacterial plaque in the outfall pipe and the rocks below. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA processed a surface water sample collected at the location. Field kits indicated elevated levels of ammonia (3.0 mg/l) and surfactants (1.0 mg/l) in the sample. A sample was collected and sent back to the EPA laboratory for analyses for e. coli and enterococcus bacteria, and selected pharmaceutical compounds.

EPA also noted the first upstream manhole to this outfall was missing the manhole cover. EPA observed that several large rocks and sticks had been thrown into the manhole. EPA notified Andy DeSantis, Assistant Director of the Chelsea Department of Public Works, of the sampling and missing manhole cover on 23 June 2011.

Once received from EPA laboratory, the analytical data for this sampling effort will be attached to this report.

Inspection ended at 9:30. EPA has been and will continue to be in contact with the City of Chelsea and its consultants as follow-up.

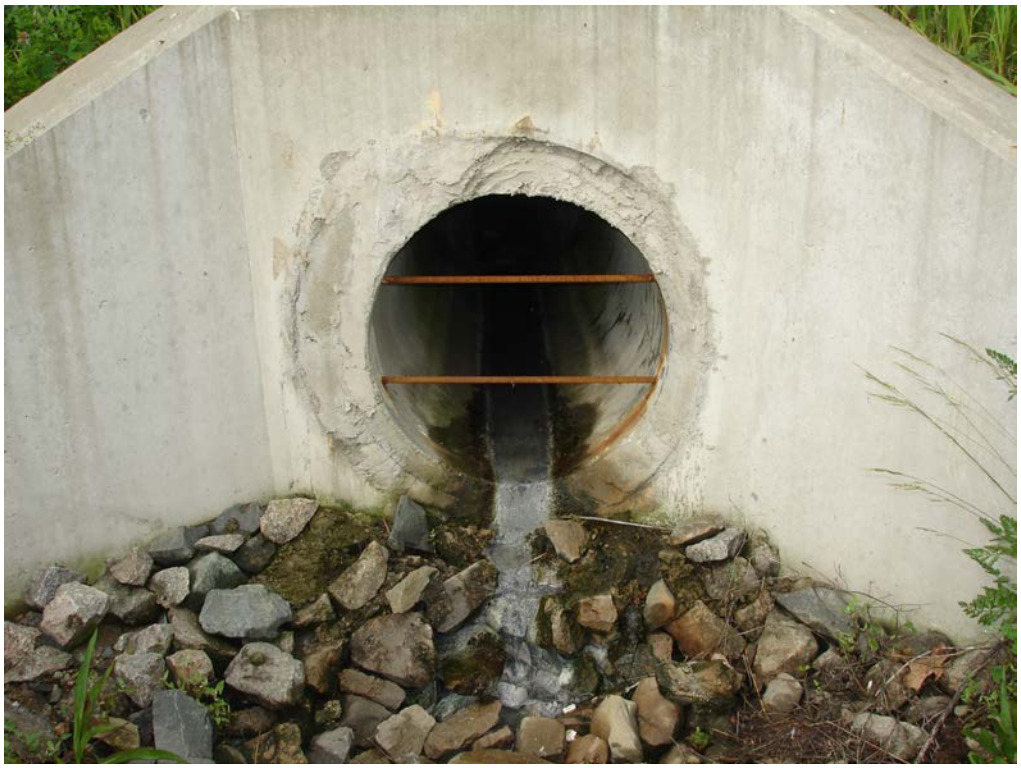

Photo 1: 6/22/11 8:50 AM. View of unnamed outfall and “Mill2a” sample location. Note gray bacterial plaque in bottom of outfall pipe and on rocks beneath pipe.

Photo 2: 6/22/11 0905 AM. View of unnamed “MillCr1” sample location in Mill Creek just upstream of where “Mill2a” discharge enters stream.

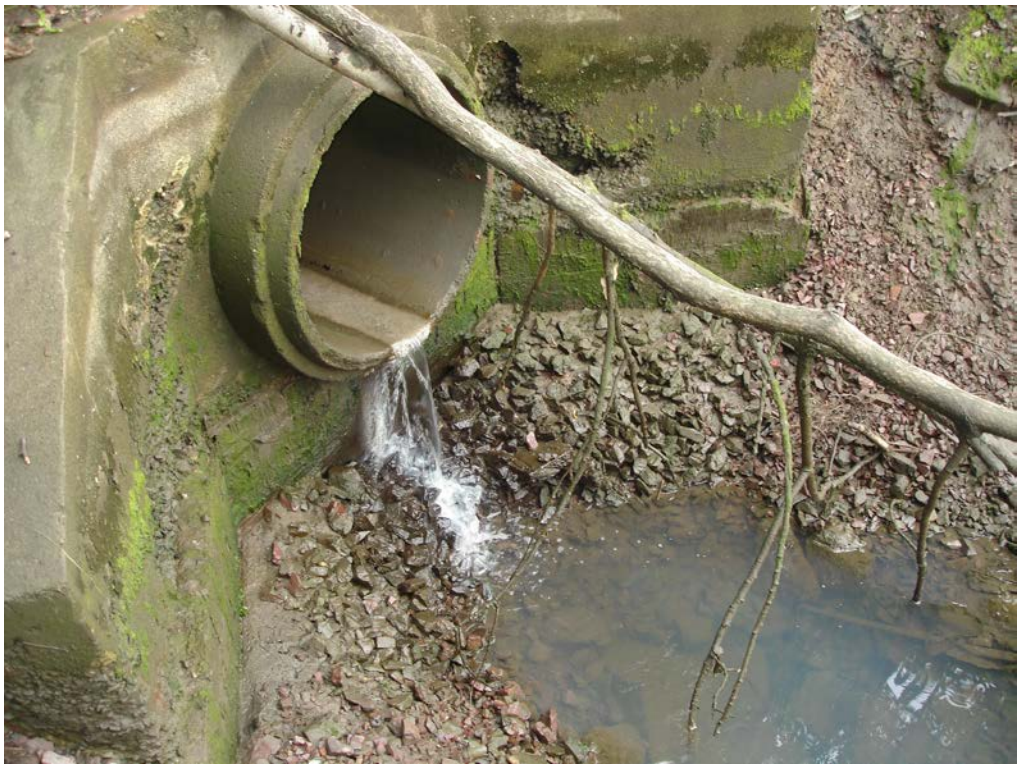

Photo 3: 6/22/11 0915 AM. View of Gillooly Street outfall and "Mill2" sample location. Note gray bacterial plaque in bottom of outfall pipe and on rocks beneath pipe, in addition to the cloudy gray appearance of the plunge pool below the outfall.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 24 August 2011

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Chelsea, MA

From: Todd Borci

To: File

On Wednesday, 6 July 2011, EPA inspector Todd Borci conducted a Compliance Sampling Inspection (CSI) of the City of Chelsea, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4"). Sampling was conducted with the assistance of the City of Chelsea and the Mystic River Watershed Association ("MyRWA"). The sampling focused on Mill Creek and contributing portions of Chelsea, Revere, and Everett MS4s that collectively contribute base flow to the Creek. Analyses of bacteria samples collected monthly just downstream of the Broadway bridge in the Mill Creek by MyRWA have indicated regular exceedances of water quality standards.

An EPA mobile laboratory vehicle was stationed at the Parkway Plaza mall parking lot. Water quality samples from sixteen separate locations were collected starting downstream at the Broadway bridge in Chelsea. Selected outfalls and portions of the Chelsea MS4 were sampled to determine sources of bacterial discharges. Samples were collected at each location for screening parameters (ammonia, surfactants, chlorine), bacteria (e. coli and enterococcus), and selected Pharmaceuticals and Personal Care Products ("PPCPs"). Temperature, conductivity, and salinity readings were conducted at each sample location, and screening parameters were analyzed by field kits by EPA personnel in the EPA mobile laboratory.

EPA personnel collected samples from the Chelsea MS4 with the assistance of the City of Chelsea, who provided staff to assist in the interpretation of sanitary sewer and stormwater infrastructure maps and the opening of selected access manholes.

Once received, data will be included in the file, in addition to a map of the sample locations. This information will be used to focus Chelsea's ongoing response to an EPA Administrative Order to identify and remove illicit connections. A number of photographs of selected sample locations are attached.

Photo 1: 7/6/11 0849 hrs. View of “MillCreek02” sample location, just upstream of Chelsea Commons outfall pipe (outfall pipe aka “Mill2A in EPA sampling efforts).

Photo 2: 7/6/11 0859 hrs. View of concrete outfall pipe and “CHEx06” sample location. Note gray bacterial growth in outflow from pipe.

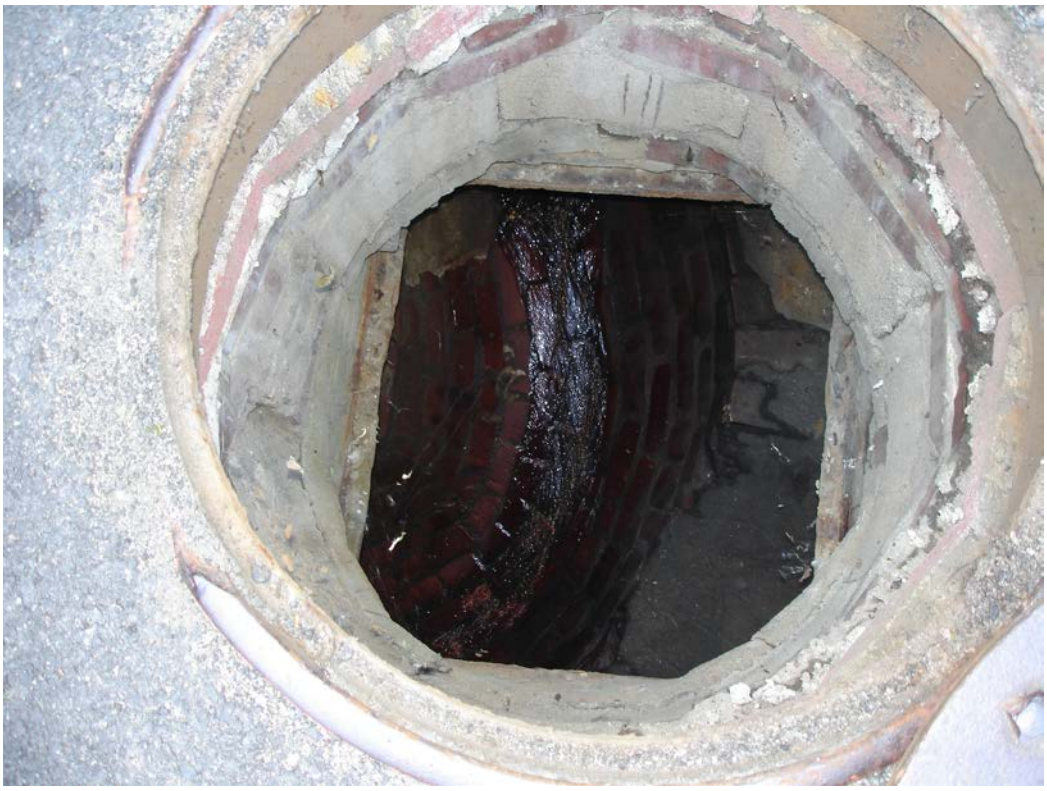

Photo 3: 7/6/11 0950 hrs. View of “WebAv” sample location, a drain access manhole on the east side of the intersection of Webster Ave and Revere Beach Parkway (Route 16).

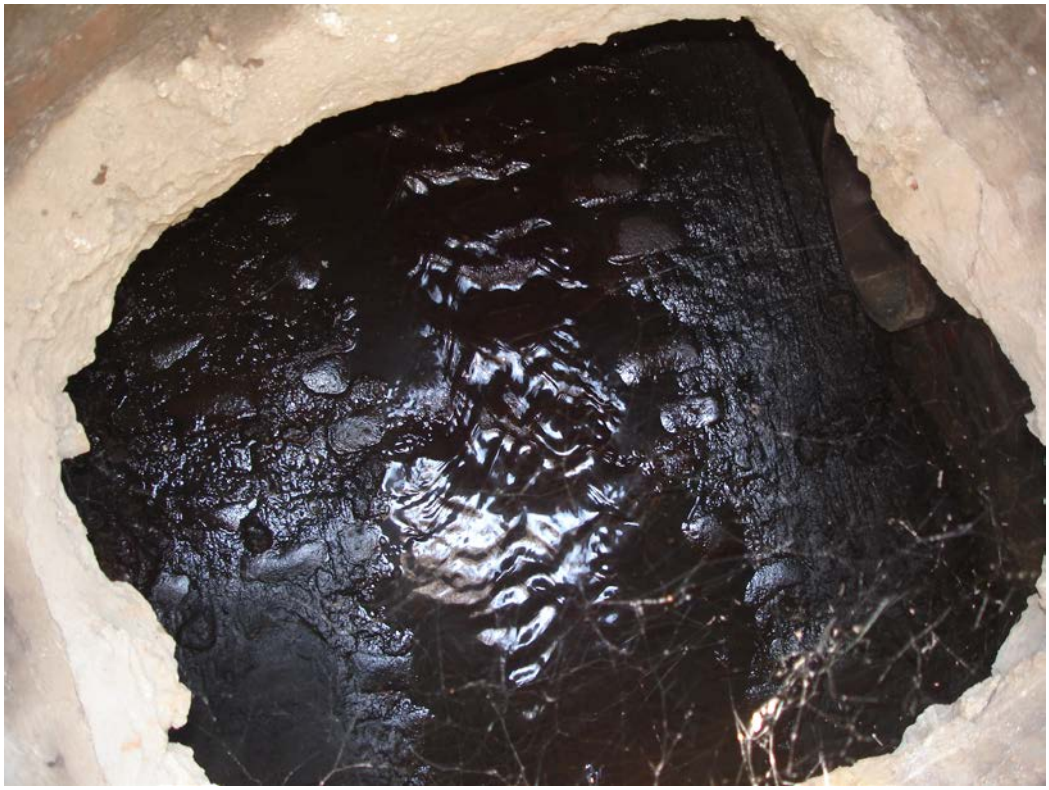

Photo 4: 7/6/11 1017 hrs. View of “Murray” sample location, a drain access manhole in Murray Street, approximately 100 ft south of Sagamore Avenue.

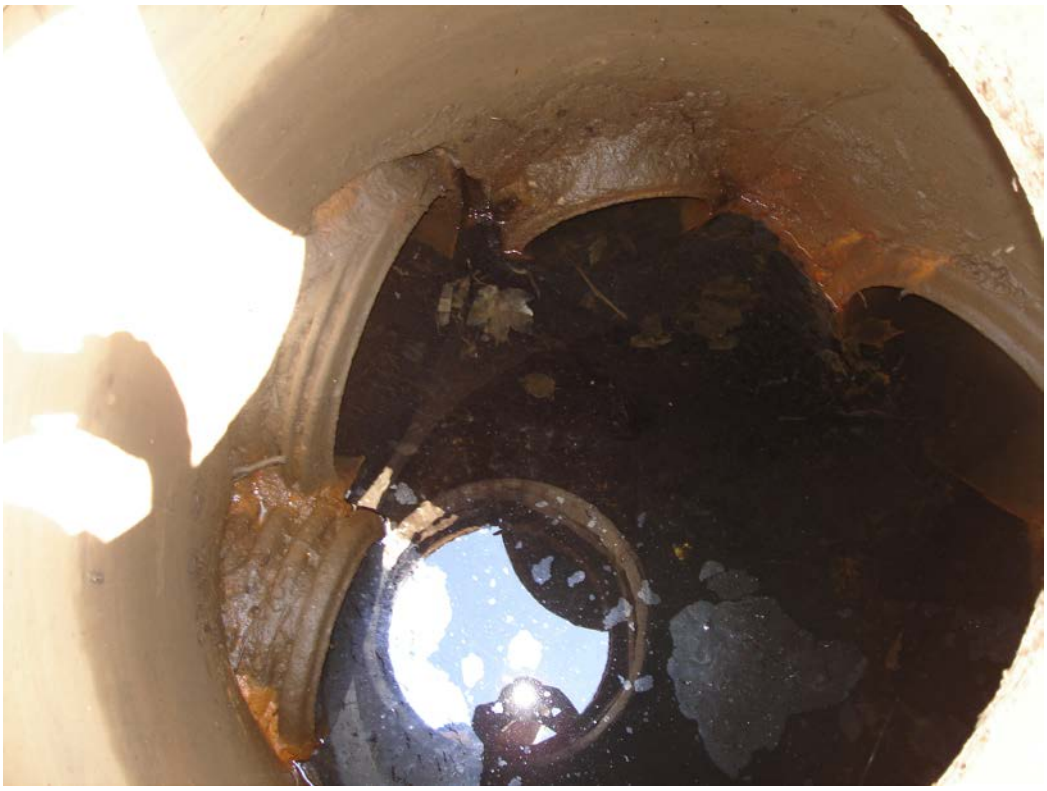

Photo 5: 7/6/11 1127 hrs. View of “RT1Ramp” sample location, a drain access manhole in the parking lot of the Chelsea housing authority approximately 50 feet east of Exeter Street.

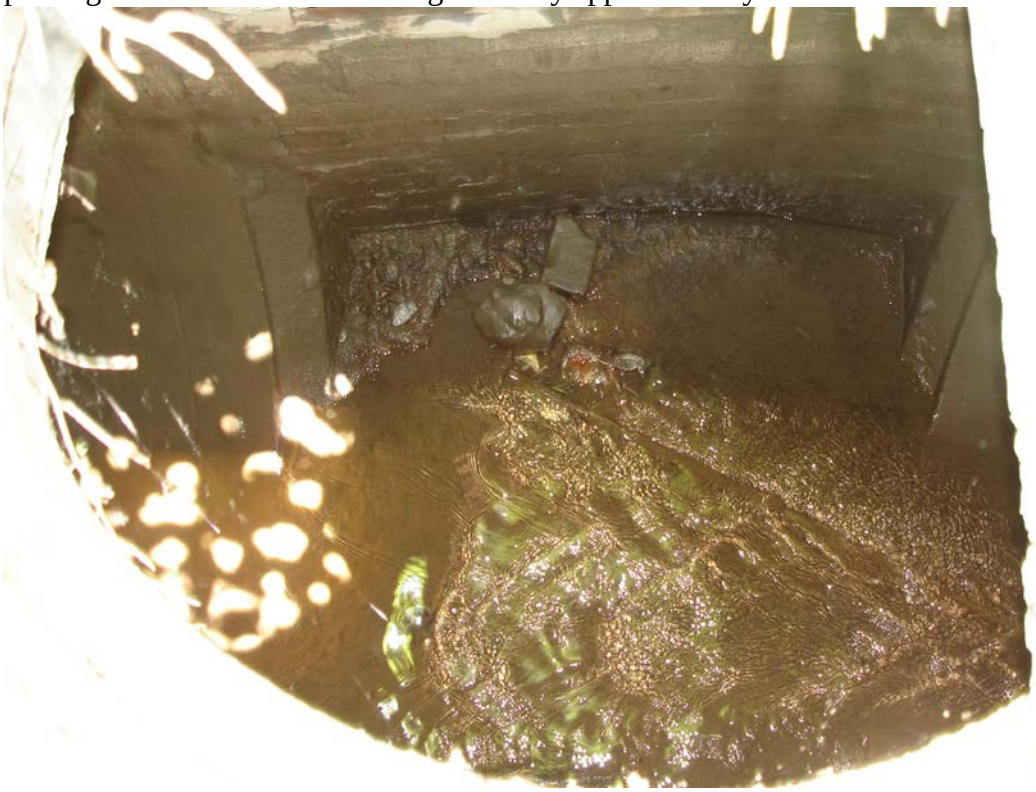

Photo 6: 7/6/11 1144 hrs. View of “GuamRd” sample location, a drain manhole approximately 100 feet northeast of the northern terminus of Guam Road, along the fenceline on the east side of the Chelsea Housing Authority property.

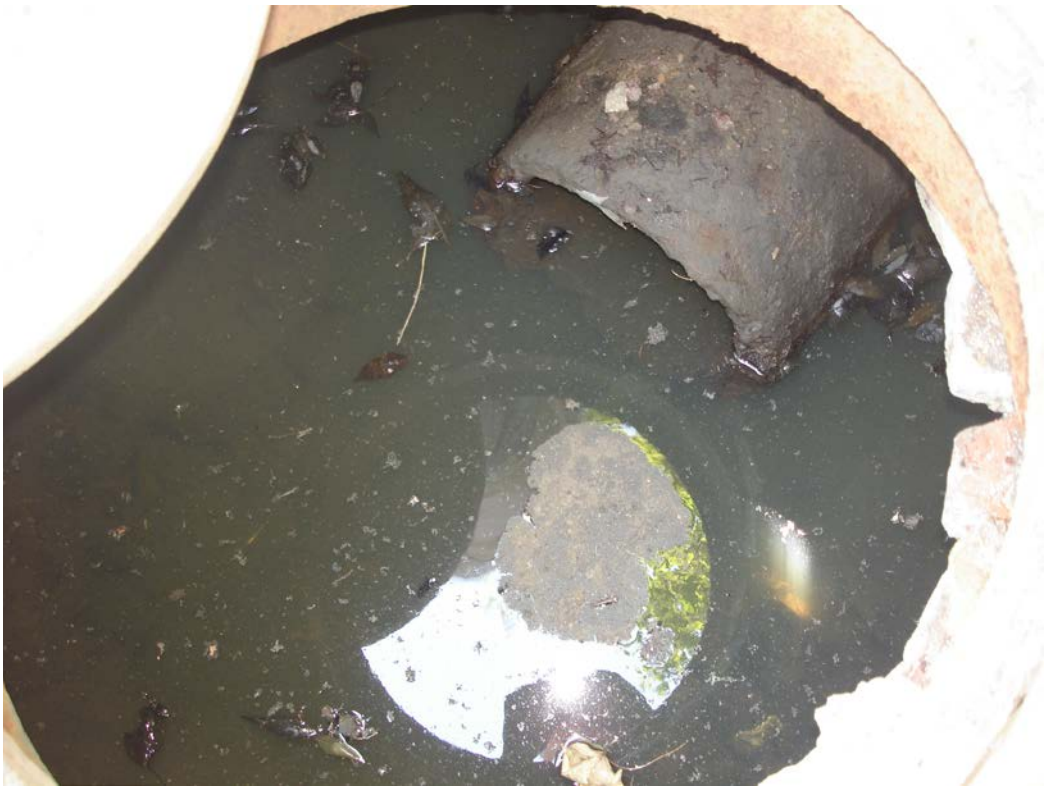

Photo 7: 7/6/11 1209. View of "VokePk" sample location, a drain manhole immediately north of Voke Park, located near an apartment complex dumpster between Annese Street and the Park.

Photo 8: 7/6/11 1230 hrs. View of "SpringV" sample location, a drain manhole at the intersection of Springvale Ave and Brook Street, just SE of the Everett line. The observed flow is from the City of Everett MS4.

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

July 26, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11070004
Project: Mill Creek- Lower Mystic
Analysis: HPLC/MS/MS Source Tracking Analysis
Analyst: Peter Philbrook PEP 7-26-2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIA-LCMS_STA.0.

The SOP is based on an EPA Regional Analytical Method developed at the EPA New England Laboratory.

Date Samples Received by the Laboratory: 07/06/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N Boudreau 8/2/11
Daniel N Boudreau
Chemistry Team Leader

DATA QUALIFIERS

RL	Reporting limit
J	Estimated value
E	Estimated value exceeds the calibration range
L	Estimated value is below the calibration range
B	Analyte is associated with the lab blank or trip blank contamination.
R	No recovery was calculated since the analyte concentration is greater than four times the spike level.
ND	Not Detected above Reporting limit
NA	Not Applicable due to high sample dilutions or sample interferences
ME	Matrix Effect - Sample matrix was responsible for either enhanced or suppressed ionization within the electrospray ionization probe

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NARRATIVE

Aqueous samples (500mL) were extracted using a solid phase extraction (SPE) technique, following EPA Method 1694, in which samples were passed through a cartridge containing a solid sorbent material which pre-concentrates the target compounds onto the sorbent. The target compounds (TCs) were then eluted off the sorbent material using methanol. The resulting eluant is concentrated to dryness and re-constituted to a final volume of 1 mL with 20/80 Methanol/Water.

A 5uL aliquot of the sample extract was injected into a High Performance Liquid Chromatograph (HPLC), and the TCs were separated chromatographically using a C18 HPLC column running a methanol / water gradient. The ionization mode used was electrospray with the polarity operating in the positive mode. The TCs were detected using a Waters Acquity TQD Tandem Quadrupole Mass Spectrometer. The tandem quadrupole is used to perform multiple reaction monitoring (MRM) where the precursor ion of interest is fragmented to product ion(s).

Quantitation was performed by the internal standard calibration method using isotopically labeled analogues. Sulfamethazine *13*C6 and Primidone d5 were used as a surrogate compounds to monitor extraction efficiency.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	MCrek 02	Lab Sample ID:	AB19254
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1
Volume Extracted:	450 mL	pH:	7.82

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**38**	2.2	
103-90-2	Acetaminophen	**63**	2.2	
29122-68-7	Atenolol	**14**	2.2	
58-08-2	Caffeine	**490**	4.4	
298-46-4	Carbamazepine	**2.0**	0.4	
486-56-6	Cotinine	**8.7**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	82	23 - 181
Sulfamethazine 13C6	37	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	CHEx06	Lab Sample ID:	AB19255
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.59

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**73**	2.0	
103-90-2	Acetaminophen	**3.2**	2.0	
29122-68-7	Atenolol	ND	2.0	
58-08-2	Caffeine	**19**	4.0	
298-46-4	Carbamazepine	**0.8**	0.4	
486-56-6	Cotinine	**9.4**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	112	23 - 181
Sulfamethazine 13C6	40	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	MCrek 01	Lab Sample ID:	AB19256
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	2
Volume Extracted:	430 mL	pH:	8.02

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**16**	4.6	
103-90-2	Acetaminophen	**35**	4.6	
29122-68-7	Atenolol	**12**	4.6	
58-08-2	Caffeine	**300**	9.2	
298-46-4	Carbamazepine	**3.5**	0.9	
486-56-6	Cotinine	**8.4**	0.9	
57-68-1	Sulfamethazine	ND	0.9	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	95	23 - 181
Sulfamethazine 13C6	53	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	CHEx19	Lab Sample ID:	AB19257
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.76

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**5.0**	2.0	
103-90-2	Acetaminophen	**3.1**	2.0	
29122-68-7	Atenolol	ND	2.0	
58-08-2	Caffeine	**41**	4.0	
298-46-4	Carbamazepine	**1.9**	0.4	
486-56-6	Cotinine	**14**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	85	23 - 181
Sulfamethazine 13C6	43	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Web Av	Lab Sample ID:	AB19258
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1 & 5
Volume Extracted:	425 mL	pH:	8.12

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**330**	12.0	
103-90-2	Acetaminophen	**15**	2.4	
29122-68-7	Atenolol	ND	2.4	
58-08-2	Caffeine	**370**	24.0	
298-46-4	Carbamazepine	**0.87**	0.5	
486-56-6	Cotinine	**39**	0.5	
57-68-1	Sulfamethazine	ND	0.5	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	96	23 - 181
Sulfamethazine 13C6	29	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Murray	Lab Sample ID:	AB19259
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1 & 10
Volume Extracted:	500 mL	pH:	8.04

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**240**	20.0	
103-90-2	Acetaminophen	**99**	2.0	
29122-68-7	Atenolol	ND	2.0	
58-08-2	Caffeine	**26000**	40.0	E
298-46-4	Carbamazepine	**4.6**	4.0	
486-56-6	Cotinine	**120**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	86	23 - 181
Sulfamethazine 13C6	49	15 - 132

Comments: E = Estimated concentration, caffeine concentration was over the calibration range after 10X dilution.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	CHEx10	Lab Sample ID:	AB19260
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.70

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**49**	2.0	
103-90-2	Acetaminophen	**180**	2.0	
29122-68-7	Atenolol	ND	2.0	
58-08-2	Caffeine	**160**	4.0	
298-46-4	Carbamazepine	**3.1**	0.4	
486-56-6	Cotinine	**20**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	99	23 - 181
Sulfamethazine 13C6	55	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	MCrek 03	Lab Sample ID:	AB19261
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.56

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**30**	2.0	
103-90-2	Acetaminophen	**31**	2.0	
29122-68-7	Atenolol	**3.6**	2.0	
58-08-2	Caffeine	**83**	4.0	
298-46-4	Carbamazepine	**4.4**	0.4	
486-56-6	Cotinine	**18**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	129	23 - 181
Sulfamethazine 13C6	43	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	MCrek 025	Lab Sample ID:	AB19262
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1 & 10
Volume Extracted:	500 mL	pH:	7.71

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**41**	20.0	
103-90-2	Acetaminophen	**230**	20.0	
29122-68-7	Atenolol	**26**	20.0	
58-08-2	Caffeine	**1200**	40.0	
298-46-4	Carbamazepine	**5.4**	4.0	
486-56-6	Cotinine	**14**	4.0	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	82	23 - 181
Sulfamethazine 13C6	33	15 - 132

Comments: Estimated concentration of urobilin 65 ng/L

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Revx07	Lab Sample ID:	AB19263
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	8.04

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**12**	2.0	
103-90-2	Acetaminophen	**1.5**	2.0	L
29122-68-7	Atenolol	ND	2.0	
58-08-2	Caffeine	**5.6**	4.0	
298-46-4	Carbamazepine	**3.5**	0.4	
486-56-6	Cotinine	**7.8**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	250	23 - 181
Sulfamethazine 13C6	52	15 - 132

Comments: Primidone surrogate recovery was outside QC limits, sufamethazine surrogate recovery was acceptable. No action was taken. The chromatogram indicated a tailing peak possibly from matrix interference/enhancement.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Fenn 0	Lab Sample ID:	AB19264
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	8.08

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**2.0**	2.0	
103-90-2	Acetaminophen	ND	2.0	
29122-68-7	Atenolol	ND	2.0	
58-08-2	Caffeine	**14**	4.0	
298-46-4	Carbamazepine	ND	0.4	
486-56-6	Cotinine	**3.9**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	88	23 - 181
Sulfamethazine 13C6	63	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Rev 06	Lab Sample ID:	AB19265
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.92

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**37**	2.0	
103-90-2	Acetaminophen	**16**	2.0	
29122-68-7	Atenolol	**2.7**	2.0	
58-08-2	Caffeine	**37**	4.0	
298-46-4	Carbamazepine	**17**	0.4	
486-56-6	Cotinine	**3.4**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	85	23 - 181
Sulfamethazine 13C6	47	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Guam Rd	Lab Sample ID:	AB19266
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1 & 5
Volume Extracted:	500 mL	pH:	8.02

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**200**	10.0	
103-90-2	Acetaminophen	**380**	10.0	
29122-68-7	Atenolol	**89**	10.0	
58-08-2	Caffeine	**5400**	20.0	
298-46-4	Carbamazepine	**7.9**	2.0	
486-56-6	Cotinine	**38**	2.0	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	85	23 - 181
Sulfamethazine 13C6	67	15 - 132

Comments: E = Estimated concentration, caffeine concentration was over the calibration range after 5X dilution.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	RTI Ramp	Lab Sample ID:	AB19267
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.94

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**24**	2.0	
103-90-2	Acetaminophen	**15**	2.0	
29122-68-7	Atenolol	ND	2.0	
58-08-2	Caffeine	**41**	4.0	
298-46-4	Carbamazepine	**0.56**	0.4	
486-56-6	Cotinine	**4.0**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	99	23 - 181
Sulfamethazine 13C6	29	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Spring V	Lab Sample ID:	AB19268
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1 & 5
Volume Extracted:	500 mL	pH:	8.03

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**210**	10.0	
103-90-2	Acetaminophen	**21**	2.0	
29122-68-7	Atenolol	**61**	2.0	
58-08-2	Caffeine	**15000**	20.0	E
298-46-4	Carbamazepine	**8.3**	2.0	
486-56-6	Cotinine	**24**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	88	23 - 181
Sulfamethazine 13C6	34	15 - 132

Comments: E = Estimated concentration, caffeine concentration was over the calibration range after 5X dilution.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Voke Pk	Lab Sample ID:	AB19269
Date of Collection:	7/6/2011	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1 & 10
Volume Extracted:	500 mL	pH:	7.70

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	**28**	2.0	
103-90-2	Acetaminophen	**140**	20.0	
29122-68-7	Atenolol	ND	2.0	
58-08-2	Caffeine	**110**	40.0	
298-46-4	Carbamazepine	**5.0**	4.0	
486-56-6	Cotinine	**100**	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	81	23 - 181
Sulfamethazine 13C6	67	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Mill Creek- Lower Mystic

Laboratory Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix	Water
Date of Extraction:	07/07/2011	Final Volume:	1 mL
Date of Analysis:	07/13/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.23

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
611-59-6	1,7-Dimethylxanthine	ND	2.0	
103-90-2	Acetaminophen	ND	2.0	
29122-68-7	Atenolol	ND	2.0	
58-08-2	Caffeine	ND	4.0	
298-46-4	Carbamazepine	ND	0.4	
486-56-6	Cotinine	ND	0.4	
57-68-1	Sulfamethazine	ND	0.4	

Surrogate Compounds	Recoveries (%)	QC Ranges
Sulfamethazine 13C3	77	
Primidone d5	91	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MATRIX SPIKE RECOVERY

Mill Creek- Lower Mystic

Sample ID: AB19256

PARAMETER	SPIKE ADDED ng/L	SAMPLE CONCENTRATION ng/L	MS CONCENTRATION ng/L	MS % REC	QC LIMITS (% REC)
1,7-Dimethylxanthine	120	16	103	72.5	7 - 120
Acetaminophen	120	35	138	85.8	1 - 120
Atenolol	120	12	111	82.5	40 - 146
Caffeine	240	300	640	142	12 - 138
Carbamazepine	24	3.5	27	97.9	27 - 144
Cotinine	24	8.4	30	90.0	48 - 131
Sulfamethazine	24	ND	13	54.2	30 - 130

LABORATORY DUPLICATE RESULTS

Mill Creek- Lower Mystic

Sample ID: AB19254

PARAMETER	SAMPLE RESULT ng/L	SAMPLE DUPLICATE RESULT ng/L	PRECISION RPD %	QC LIMITS
1,7-Dimethylxanthine	38	40	5.13	50
Acetaminophen	63	83	27.4	50
Atenolol	14	17	19.4	50
Caffeine	490	410	17.8	50
Carbamazepine	2.0	3.3	49.1	50
Cotinine	8.7	11	23.4	50
Sulfamethazine	ND	ND	ND	50

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) RECOVERY

Mill Creek- Lower Mystic

COMPOUND	SPIKE ADDED ng/L	LFB CONCENTRATION ng/L	LFB RECOVERY %	QC LIMITS (% REC)
1,7-Dimethylxanthine	120	126	105	14 - 155
Acetaminophen	120	108	90.0	43 - 129
Atenolol	120	101	84.2	45 - 136
Caffeine	240	251	105	57 - 132
Carbamazepine	24	23	95.8	39 - 136
Cotinine	24	21	87.5	60 - 127
Sulfamethazine	24	17	70.8	30 - 130

Comments:

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
11070004	Mill Creek – Lower Mystic

SAMPLERS: *(Signature)* Todd Borci

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	E. coli Enterco RPCP	REMARKS
MCreek02	7/6/11	8:45		X		2	X X	
CHEx06		8:52						
MCreek01		8:45						
CHEx19		8:35						
WebAv		09:55				3 2		
Murray		10:15						
CHEx10		10:30						
MCreek03		9:50						
MCreek05		9:35						
REVx07		11:35						
Fenn0		11:30						
REV06		11:15						
GUAMRD		11:40						
RTI Ramp		11:15						
SpringV		12:25						

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Stephanie Lanon	7/6/11 14:15				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
			7/6/11 14:15		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

20C

1-17390

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME	SAMPLERS: (Signature)
11070004	Mill Creek Lower Mystic	Todd Borci

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	E.coli/Enterco	PRCP					REMARKS
VOKEPK		12:23				2	X	X					
WEBAVD		9:55				1	X						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Stephanie Linen	7/6/11 14:15				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
			7/6/11 14:15		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

20°C

1-17391

Inspection Conclusion Data Sheet (ICDS)

FY2010

Inspector: _Todd Borci_____

Inspection Date: _April 19, 2012_____

Facility Name/Address: _City of Chelsea, Massachusetts MS4 – Various Locations____

Facility Manager/Title and Address (if different from facility address): _Andy DeSantis,_____
Asst. Director of Public Works, 500 Broadway, Chelsea, MA 02150_____

Facility Contact/Title and Address (if different from facility address): _ _____

1. Media Type: (Check one)

□ CAA-Stationary □ CAA-Mobile Source □ CAA-112r
□ CAA-NESHAP
□ CWA-NPDES □ CWA-Pretreatment POTW □ CWA-Pretreatment IU
□ CWA 311 □ CWA 404 Ξ CWA-Stormwater
□ EPCRA 313 □ EPCRA N313
□ RCRA-C □ RCRA-I
□ SDWA-UIC □ SDWA-PWSS
□ TSCA-Lead Paint □ TSCA-PCBs □ TSCA-Core □ TSCA-AHERA

2. Did you observe deficiencies (potential violations) during the inspection?

□ Yes Ξ No

3. If you observed deficiencies, did you communicate them to the facility during the inspection?

□ Yes Ξ No

4. Deficiencies observed?

_____ Potential violation of a compliance schedule in an enforceable order.

_____ Potential failure to maintain a record or failure to disclose a document.

_____ Potential failure to maintain, inspect or repair equipment including meters, sensors, and recording equipment.

_____ Potential failure to complete or submit a notification, report, certification, or manifest.

_____ Potential failure to obtain a permit, product approval, or certification.

_____ Potential failure to follow a required sampling or monitoring procedure or laboratory procedure.

_____ Potential failure to follow or develop a required management practice or procedure.

_____ Potential failure to identify and manage a regulated waste or pollutant in any media.

_____ Potential failure to report regulated events such as spills, accidents, etc.

_____ Potential incorrect use of a material (e.g., pesticide, waste, product, etc.) or use of improper or unapproved material.

_____ Potential failure to follow a permit condition(s).

5 Did you observe or see the facility take any actions during the inspection to address the deficiencies communicated to the facility?

□ Yes □ No Ξ N/A only if #3 was NO.

If YES, check only the action(s) actually observed/seen or write in a short description of the action in the "optional" section. (Check all that apply)

Action(s) taken

_____ Complete(d) a Notification or Report

_____ Correct(ed) Monitoring Deficiencies

_____ Correct(ed) Record Keeping Deficiencies

_____ Implemented New or Improved Management Practices or Procedures

_____ Improved Pollutant Identification (e.g., Labeling, Manifesting, Storage, etc.)

_____ Reduced Pollution (e.g., Use Reduction, Industrial Process Change, Emissions or Discharge Change, etc.)

_____ Request(ed) a Permit Application or Applied for a Permit

_____ Verified Compliance with Previously Issued Enforcement Action - Part or All Conditions

The following common air or water pollutant(s) **should only be checked** if the "Reduced Pollution" line was checked.

Water: □ Ammonia □ BOD □COD □TSS □O/G □Total Coliform □D.O.
□ Metals □Cyanide □ Other_____

Air: □ NOx □ SO2 □ PM □ VOC □ Metals □ HAPs □ CO
□ Other_____

6. Did you provide general compliance assistance in accordance with the policy on the Role of the EPA Inspector in Providing Compliance Assistance During Inspections?

Ξ Yes No

7. Did you provide site-specific compliance assistance in accordance with the policy on the Role of the EPA Inspector in Providing Compliance Assistance During Inspections?

Ξ Yes No

Optional Additional Information: EPA inspectors may wish to provide a narrative description of actions taken by the facility or assistance to help the facility come into compliance. (Narratives may be used in national or regional reports to provide examples of EPA inspection outcomes).

___EPA Inspector observed City MS4 outfalls before and after meeting with City regarding identification and removal of illicit connections. Multiple outfalls in the Mill Creek and Chelsea Creek area observed and discussed with City.

Inspection Conclusion Data Sheet (ICDS)

FY2010

Inspector: _Todd Borci_____

Inspection Date: _April 19, 2012_____

Facility Name/Address: _City of Chelsea, Massachusetts MS4 – Various Locations____

Facility Manager/Title and Address (if different from facility address): _Andy DeSantis,_____
Asst. Director of Public Works, 500 Broadway, Chelsea, MA 02150_____

Facility Contact/Title and Address (if different from facility address): _ _____

1. Media Type: (Check one)

□ CAA-Stationary □ CAA-Mobile Source □ CAA-112r
□ CAA-NESHAP
□ CWA-NPDES □ CWA-Pretreatment POTW □ CWA-Pretreatment IU
□ CWA 311 □ CWA 404 Ξ CWA-Stormwater
□ EPCRA 313 □ EPCRA N313
□ RCRA-C □ RCRA-I
□ SDWA-UIC □ SDWA-PWSS
□ TSCA-Lead Paint □ TSCA-PCBs □ TSCA-Core □ TSCA-AHERA

2. Did you observe deficiencies (potential violations) during the inspection?

□ Yes Ξ No

3. If you observed deficiencies, did you communicate them to the facility during the inspection?

□ Yes Ξ No

4. Deficiencies observed?

_____ Potential violation of a compliance schedule in an enforceable order.

_____ Potential failure to maintain a record or failure to disclose a document.

_____ Potential failure to maintain, inspect or repair equipment including meters, sensors, and recording equipment.

_____ Potential failure to complete or submit a notification, report, certification, or manifest.

_____ Potential failure to obtain a permit, product approval, or certification.

_____ Potential failure to follow a required sampling or monitoring procedure or laboratory procedure.

_____ Potential failure to follow or develop a required management practice or procedure.

_____ Potential failure to identify and manage a regulated waste or pollutant in any media.

_____ Potential failure to report regulated events such as spills, accidents, etc.

_____ Potential incorrect use of a material (e.g., pesticide, waste, product, etc.) or use of improper or unapproved material.

_____ Potential failure to follow a permit condition(s).

5 Did you observe or see the facility take any actions during the inspection to address the deficiencies communicated to the facility?

□ Yes □ No Ξ N/A only if #3 was NO.

If YES, check only the action(s) actually observed/seen or write in a short description of the action in the "optional" section. (Check all that apply)

Action(s) taken

_____ Complete(d) a Notification or Report

_____ Correct(ed) Monitoring Deficiencies

_____ Correct(ed) Record Keeping Deficiencies

_____ Implemented New or Improved Management Practices or Procedures

_____ Improved Pollutant Identification (e.g., Labeling, Manifesting, Storage, etc.)

_____ Reduced Pollution (e.g., Use Reduction, Industrial Process Change, Emissions or Discharge Change, etc.)

_____ Request(ed) a Permit Application or Applied for a Permit

_____ Verified Compliance with Previously Issued Enforcement Action - Part or All Conditions

The following common air or water pollutant(s) **should only be checked** if the "Reduced Pollution" line was checked.

Water: □ Ammonia □ BOD □COD □TSS □O/G □Total Coliform □D.O.
□ Metals □Cyanide □ Other_____

Air: □ NOx □ SO2 □ PM □ VOC □ Metals □ HAPs □ CO
□ Other_____

6. Did you provide general compliance assistance in accordance with the policy on the Role of the EPA Inspector in Providing Compliance Assistance During Inspections?

Ξ Yes No

7. Did you provide site-specific compliance assistance in accordance with the policy on the Role of the EPA Inspector in Providing Compliance Assistance During Inspections?

Ξ Yes No

Optional Additional Information: EPA inspectors may wish to provide a narrative description of actions taken by the facility or assistance to help the facility come into compliance. (Narratives may be used in national or regional reports to provide examples of EPA inspection outcomes).

___EPA Inspector observed City MS4 outfalls before and after meeting with City regarding identification and removal of illicit connections. Multiple outfalls in the Mill Creek and Chelsea Creek area observed and discussed with City.

EPA New England Stormwater Outfall Inspection & Sampling Summary - Chelsea, MA 7/6/11

Location																Coordinates		YSI Meter			Weather
Date	Town	Site Name	Time	Fecal coliform (MPN/100 ml)	Entero (MPN/100ml)	Surfactants	Chlorine	NH3 (mg/l) Test St.	PPCP ng/L Atenolol	Acetaminophen	Cotinine	1,7-Dimethylxanthine	Caffeine	Sulfamethazine	Carbamazepine	GPS North(+)	GPS West (-)	Salinity ppt	Temp C	Conductivity uS	
8/16/11	N. Providence	010	8:15	2,400	250				ND	2.7	11	1 6	33	ND	ND		-71 2202638	0.4	15.8	859	Dry
8/16/11	N. Providence	015	9:40						ND	ND	3.6	7	8 3	ND	0 68						
8/16/11	N. Providence	014	10:05						ND	2.4	4.1	3.7	28	ND	1.6						
8/16/11	N. Providence	005A	11:20	4,300	2,419				ND	7	2.1	2 2	12	ND	0 84						
8/16/11	N. Providence	005B	11:15	2,400	411				ND	ND	0.74	ND	3 6	ND	ND						
8/16/11	N. Providence	005C	11:10	4 600 000	2 419				820	16000	150	4400	8500	ND	ND						
8/16/11	N. Providence	001	12:15	930	326				ND	ND	3	4	11	ND	0.78						

E. coli - color key: Red ≥ 10,000 col/100ml, Orange ≥ 1260 col/100ml, Yellow ≥ 235 col/100ml, Black < 235 col/100ml
Entero - color key: Red ≥ 1000 col/100ml, Orange ≥ 350 Yellow ≥ 61 col/100ml, Black < 61 col/100ml
NH3 - color key: Red ≥ 6 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0 0 mg/L
Surfactants - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0 25 mg/L, Black < 0.25 mg/L *** may give false positive at salinity greater than 1 ppt
PPCP color key: Pink = Concentrations greater than background
Cl2 - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.3 mg/L, Yellow ≥ 0.02 mg/L, Black < 0.02 mg/L

REPORTING LIMITS
E. coli = 4 MPN/100mL
Enterococcus = 10 MPN/100mL
Surfactants Field = 0.1 mg/L
Ammonia Field = 0.1 mg/L

ND – not detected above the associated detection limit
NA – not applicable (analyte not tested for at that site at this time)
(~) – data reported as estimate

EPA New England Stormwater Outfall Inspection & Sampling Summary - Chelsea, MA 7/6/11

Location																Coordinates		YSI Meter			Weather
Date	Town	Site Name	Time	Fecal coliform (MPN/100 ml)	Entero (MPN/100ml)	Surfactants	Chlorine	NH3 (mg/l) Test Strip	PPCP ng/L Atenolol	Acetaminophen	Cotinine	1,7-Dimethylxanthine	Caffeine	Sulfamethazine	Carbamazepine	GPS North(+)	GPS West (-)	Salinity ppt	Temp C	Conductivity uS	
8/16/11	N. Providence	Pearl St (010)	8:15	2,400	250	0.25	0 03	0.25	ND	2.7	11	1 6	33	ND	ND		-71 2202638	0.4	15.8	859	Dry
8/16/11	N. Providence	Allendale (015)	9:40			0.13	0 04	0.00	ND	ND	3.6	7	8 3	ND	0 68						
8/16/11	N. Providence	Falco (014)	10:05			0.13	0 03	0.00	ND	2.4	4.1	3.7	28	ND	1.6						
8/16/11	N. Providence	Gillen (005-A)	11:20	4,300	2,419	0.13	0 02	0.13	ND	7	2.1	2 2	12	ND	0 84						
8/16/11	N. Providence	Gillen (005-B)	11:15	2,400	411	0.13	0 01	0.00	ND	ND	0.74	ND	3 6	ND	ND						
8/16/11	N. Providence	Gillen (005-C)	11:10	4 600 000	2 419	1.00	0 00	0.88	820	16000	150	4400	8500	ND	ND						
8/16/11	N. Providence	Vultoro (001)	12:15	930	326	0.13	0 00	0.13	ND	ND	3	4	11	ND	0.78						
11/16/11	N. Providence	David St	8:30																		
11/16/11	N. Providence	Metcalf	9:20																		
11/16/11	N. Providence	Milton	9:50																		
11/16/11	N. Providence	Falco (014-A)	10:15																		
11/16/11	N. Providence	Falco (014-B)	10:20																		
11/16/11	N. Providence	Smith	11:30																		
11/16/11	N. Providence	Brookfarm	11:50																		
11/16/11	N. Providence	Mineral Spring	12:25																		
11/16/11	N. Providence	Girard	12:30																		
11/16/11	N. Providence	Obed	12:40																		
11/16/11	N. Providence	Gillen 005-A	1:00																		
11/16/11	N. Providence	Gillen 005-B	1:03																		
11/16/11	N. Providence	Gillen 005-C	1:05																		

Surfactants - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0 25 mg/L, Black < 0.25 mg/L *** may give false positive at salinity greater than 1 ppt

PPCP color key: Pink = Concentrations greater than background

Cl2 - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.3 mg/L, Yellow ≥ 0.02 mg/L, Black < 0.02 mg/L

REPORTING LIMITS

E. coli = 4 MPN/100mL

Enterococcus = 10 MPN/100mL

Surfactants Field = 0.1 mg/L

Ammonia Field = 0.1 mg/L

ND – not detected above the associated detection limit

NA – not applicable (analyte not tested for at that site at this time)

(~) – data reported as estimate

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region I - EPA New England

Author: Andrew Spejewski

Drafted Date: February 11, 2009
Finalized Date:
Reviewed by:
Reviewed date:

I. Facility Information

A. Facility Name: Town of Concord Municipal Separate Storm Sewer System (MS4)
B. Facility Location: Town of Concord, Mass.
C. Facility Contact: Bill Renault
D. Contact Mailing Address: Concord Public Works
133 Keyes Road
Concord, MA 01742
E. Permit #: MA041187

II. Background Information

A. Date of inspection: February 10, 2009
B. Weather Conditions: (Cool clear)
C. US EPA Representative(s): Andrew Spejewski
D. State/Local Representative(s): None
E. Previous Enforcement Actions: No applicable actions known

III Purpose of Inspection

The inspection focused on the Towns Illicit Detection and Elimination (IDDE) program, one of the six required elements of the MS4 permit, and was designed to clarify Town's actions described in the response to a 2008 EPA information request.

IV Facility Description

V Inspection

On about February 4, 2009, Mr. Spejewski phoned Mr. Renault to schedule the inspection, and the two agreed on February 10 at 1:00 PM.

Mr. Spejewski duly arrived at the Concord DPW offices at 1:00 and met Mr. Renault and Rich Raine, the DPW Director. Mr. Spejewski presented his credentials and explained the purpose of the inspection.

Organization:
Mr. Renault stated that he administered the MS4 program. Mr. Renault is in the Town Engineering group, which is part of the Department of Public Services. Mr. Raine stated that there was no formal committee or organization for the MS4 program, but that town department heads met regularly and there was good communication among them.

Mr. Renault stated he was unaware of any interconnections with neighboring town's storm sewers.

Mr. Renault stated that there were some small privately-owned drainage systems (for individual properties) that connected to the town MS4. Mr. Renault stated that all such systems are required to meet the town guidelines for storm sewer connections.

Mr. Renault stated that Mass Highway owns Route 2, including catchbasins and storm sewers. He stated that he has coordinated with Mass Highway on the design of several road projects (including drainage), but has not interacted with them on any MS4 issues.

Mr. Spejewski noted that the annual reports required by the MS4 permit have been late each of the last four years, and asked if there was any reason. Mr. Renault and Mr. Reine stated that it was primarily a matter of not prioritizing the reports over other work; additionally there had been turnover in both Mr. Renault and Mr. Reine's position in the last two years. Mr. Renault stated that he had contacted Thelma Murphy at EPA to let her know that reports would be late. [Note: Following the inspection, Mr. Renault forwarded to Mr. Spejewski an e-mail dated August 19 from Mr. Renault to another Concord employee stating that Mr. Renault had left a voice message with Ms. Murphy about the late report.]

Map

Mr. Spejewski asked why there were catchbasins on the map without pipes connecting them, noting as an example one catchbasin north of Walden Pond.

Mr. Renault and Mr. Reine stated that only pipes that had been field confirmed were added to the map. Mr. Renault stated that there were infiltrative catchbasins in the Town that were not connected to storm sewers, and that he believed the catchbasin near Walden might be infiltrative.

Mr. Renault stated that a list of outfalls was kept in the GIS system, which included fields for various data including field observations such as the presence of foam or odor.

Screening

Mr. Renault stated that every outfall had been located, but not necessarily screened for illicit connections. However, every catchbasin and manhole had been screened for the presence of dry weather flow, odor and foam. [This was the 2002 /2003 screening referred to in the towns 308 response]

Mr. Renault stated that each catchbasin is also inspected by a town employee during a contractor clean-out of the catchbasins. The town's goal is cleaning each catchbasin every other year. Mr. Spejewski asked if there was a written form or other method of relaying observations from field personnel to the Town Engineer. Mr. Reine stated that there was no formal method, but informal communications are common.

Plan:

Mr. Renault stated that the Town is developing a written IDDE plan that will be produced by the GIS department.

Mr. Spejewski asked Mr. Renault to state what the Town's plan is right now (not necessarily what is written). Mr. Renault stated that the town has a listing of priority structures (catchbasins and manholes that screening showed had odor or other reason to suspect illicit connections). The town is planning on hiring contractor to develop a watershed map of the town, and beginning with those subwatersheds that contain priority structures, screen outfalls. The town would then investigate outfalls that showed evidence of illicit connections.

The two stated that the Town's IDDE plan will include guidelines on when outfalls required further investigation for potential illicit connections.

Mr. Spejewski asked why the Town had waited until 2009 to investigate the manholes and catchbasins that showed signs of potential illicit connections. Mr. Renault and Mr. Raine could not give a good answer.

By-law

Mr. Renault stated that the Town's Storm Drain Connection Policy was based on the authority given by the Town's Private Digging of Roads Bylaw. Mr. Raine stated they had a legal opinion that the Policy was enforceable under the Bylaw.
Mr. Raine stated that the Town has used the Bylaw to force the removal of connections to the sanitary sewer.

Mr. Spejewski asked if the town collected any data on water quality in streams or other water bodies. Mr. Raine staetd that the Town-owned POTW regularly tested. He was unaware of any other water quality testing in town.

Mr. Raine stated that the town cooperates with the Organization for the Assabett River, and has recently received a grant from OAR to install porous pavement. Mr. Raine is not aware of any water quality testing by OAR.

At this point, Mr. Spejewski thanked Mr. Raine and Mr. Renault for their cooperation and left the site.

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NDPES	yy/mm/dd	Inspection Type	Inspector	Fac Type
1 N	2	3 MAR041194	11 12 11/09/14	17 18 <	19 R 20

Inspection Type Description: Stormwater-MS4-sampling

Remarks: 21 66

Inspec ion Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved
67 00.25 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number)
In-stream sample located on upstream side of Sladen Avenue - Peppermint Brook (42.66340652 N, 71.31964985 W)
Outfall located next to bridge on Parker Avenue - discharges to Beaver Brook (42.66861227 N, 71.32649457 W)
Outfall located on Victory Lane - discharges to Beaver Brook (42.66935312 N, 71.32737840 W)

Entry Time/Date: 9:20AM 9/14/2011
Permit Effective Date: 5/1/2003
Exit Time/Date: 11:10AM 9/14/2011
Permit Expiration Date: 5/1/2008

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)
No contact with the Town of Dracut was made during this sampling inspection.

Other Facility Data
Receiving Water: Merrimack River

Name, Address of responsible Official/Title/Phone and Fax Number.
Glen A. Edwards
Assistant Town Manager/Town Planner
Phone: (978) 453-4557 Fax: (978) 452-7924

Contacted: [ ] Yes [X] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[ ] Permit	[ ] Self-Monitoring Program	[ ] Pretreatment	[X] MS4
[ ] Records/Reports	[ ] Compliance Schedules	[ ] Pollution Preven ion	
[ ] Facility Site Review	[ ] Laboratory	[X] Storm Water	
[X] Effluent/Receiving Waters	[ ] Operations & Maintenance	[ ] Combined Sewer Overflow	
[ ] Flow Measurement	[ ] Sludge Handling/Disposal	[ ] Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

SEV Codes	SEV Description

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Ted Lavery Erin F. Trainor	US EPA / OEP / (617) 918-1683 / (617) 918-1505 US EPA / EIA / (617) 918-8382 / (617) 918-8282	9/23/2011 9/23/2011
Signature of Management QA Reviewer	Agency/Office/Phone and Fax Numbers	Date

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NDPES	yy/mm/dd	Inspection Type	Inspector	Fac Type
1 N	2	3 MAR041194	11 12 11/09/21	17 18 <	19 R	20

Inspection Type Description: Stormwater-MS4-sampling

Remarks: 21 66

Inspec ion Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved
67 00.25 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number)
In-stream sample located on upstream side of Sladen Avenue - Peppermint Brook (42.66340652 N, 71.31964985 W)
Outfall located next to bridge on Parker Avenue - discharges to Beaver Brook (42.66861227 N, 71.32649457 W)

Entry Time/Date: 9:15AM 9/21/2011
Permit Effective Date: 5/1/2003
Exit Time/Date: 10:47AM 9/21/2011
Permit Expiration Date: 5/1/2008

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)
No contact with the Town of Dracut was made during this sampling inspection.

Other Facility Data
Receiving Water: Merrimack River

Name, Address of responsible Official/Title/Phone and Fax Number.
Glen A. Edwards
Assistant Town Manager/Town Planner
Phone: (978) 453-4557 Fax: (978) 452-7924

Contacted: [ ] Yes [X] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[ ] Permit	[ ] Self-Monitoring Program	[ ] Pretreatment	[X] MS4
[ ] Records/Reports	[ ] Compliance Schedules	[ ] Pollution Preven ion	
[ ] Facility Site Review	[ ] Laboratory	[X] Storm Water	
[X] Effluent/Receiving Waters	[ ] Operations & Maintenance	[ ] Combined Sewer Overflow	
[ ] Flow Measurement	[ ] Sludge Handling/Disposal	[ ] Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

SEV Codes	SEV Description

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Ted Lavery	US EPA / OEP / (617) 918-1683 / (617) 918-1505	9/23/2011
Erin F. Trainor	US EPA / EIA / (617) 918-8382 / (617) 918-8282	9/23/2011
Signature of Management QA Reviewer	Agency/Office/Phone and Fax Numbers	Date

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NDPES	yy/mm/dd	Inspection Type	Inspector	Fac Type
1 N	2	3 MAR041194	11 12 11/10/05	17 18 <	19 R	20

Inspection Type Description: Stormwater-MS4-sampling

Remarks: 21 ... 66

Inspec ion Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved
67 . 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number)
In-stream sample located on upstream side of Sladen Avenue - Peppermint Brook (42.66340652 N, 71.31964985 W)
Outfall located next to bridge on Parker Avenue - discharges to Beaver Brook (42.66861227 N, 71.32649457 W)

Entry Time/Date: 8:50AM 10/5/2011
Permit Effective Date: July 2003
Exit Time/Date: 9:55AM 10/5/2011
Permit Expiration Date: July 2008

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)
No contact with the Town of Dracut was made during this sampling inspection.

Other Facility Data
Receiving Water: Merrimack River

Name, Address of responsible Official/Title/Phone and Fax Number.
Glen A. Edwards
Assistant Town Manager/Town Planner
Phone: (978) 453-4557 Fax: (978) 452-7924

Contacted: [ ] Yes [X] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[ ] Permit	[ ] Self-Monitoring Program	[ ] Pretreatment	[X] MS4
[ ] Records/Reports	[ ] Compliance Schedules	[ ] Pollution Preven ion	
[ ] Facility Site Review	[ ] Laboratory	[X] Storm Water	
[X] Effluent/Receiving Waters	[ ] Operations & Maintenance	[ ] Combined Sewer Overflow	
[ ] Flow Measurement	[ ] Sludge Handling/Disposal	[ ] Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

SEV Codes	SEV Description

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Erin F. Trainor	US EPA / EIA / (617) 918-8382 / (617) 918-8282	11/22/2011
Signature of Management QA Reviewer	Agency/Office/Phone and Fax Numbers	Date

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NDPES	yy/mm/dd	Inspection Type	Inspector	Fac Type
1 N	2	3 MAR041194	11 12 11/10/12	17 18 <	19 R	20

Inspection Type Description: Stormwater-MS4-sampling

Remarks: 21 66

Inspec ion Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved
67 . 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number)
In-stream sample located on upstream side of Sladen Avenue - Peppermint Brook (42.66340652 N, 71.31964985 W)
Outfall located next to bridge on Parker Avenue - discharges to Beaver Brook (42.66861227 N, 71.32649457 W)

Entry Time/Date: 9:40AM 10/12/2011
Permit Effective Date: July 2003
Exit Time/Date: 10:30AM 10/12/2011
Permit Expiration Date: July 2008

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)
No contact with the Town of Dracut was made during this sampling inspection.

Other Facility Data
Receiving Water: Merrimack River

Name, Address of responsible Official/Title/Phone and Fax Number.
Glen A. Edwards
Assistant Town Manager/Town Planner
Phone: (978) 453-4557 Fax: (978) 452-7924

Contacted: [ ] Yes [X] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[ ] Permit	[ ] Self-Monitoring Program	[ ] Pretreatment	[X] MS4
[ ] Records/Reports	[ ] Compliance Schedules	[ ] Pollution Preven ion	
[ ] Facility Site Review	[ ] Laboratory	[X] Storm Water	
[X] Effluent/Receiving Waters	[ ] Operations & Maintenance	[ ] Combined Sewer Overflow	
[ ] Flow Measurement	[ ] Sludge Handling/Disposal	[ ] Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

SEV Codes	SEV Description

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Erin F. Trainor	US EPA / EIA / (617) 918-8382 / (617) 918-8282	11/22/2011
Signature of Management QA Reviewer	Agency/Office/Phone and Fax Numbers	Date

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NDPES	yy/mm/dd	Inspection Type	Inspector	Fac Type
N	MAR041194	110524	R	R	1

Remarks

Inspection Work Days: 1.0 | Facility Self-Monitoring Evaluation Rating: | B1: | QA: | Reserved:

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NDPES permit number)	Entry Time/Date	Permit Effective Date
Various locations **Dracut, MA**	Exit Time/Date	Permit Expiration Date

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)
No representatives present or notified

Other Facility Data

Name, Address of responsible Official/Title/Phone and Fax Number.

Contacted: [ ] Yes [X] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[ ] Permit	[ ] Self-Monitoring Program	[ ] Pretreatment	[ ] MS4
[ ] Records/Reports	[ ] Compliance Schedules	[ ] Pollution Preven ion	
[ ] Facility Site Review	[ ] Laboratory	[X] Storm Water	
[ ] Effluent/Receiving Waters	[ ] Operations & Maintenance	[ ] Combined Sewer Overflow	
[ ] Flow Measurement	[ ] Sludge Handling/Disposal	[ ] Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

Unannounced reconnaissance of stormwater discharge locations. Stormwater pipes and receiving waters are being evaluated for potential future compliance sampling. EPA staff participating: David Turin, Ted Lavery, Erin Trainer. Locations evaluated were at street crossings of (1) Beaver Brook at Parker Av; and (2) Peppermint Brook at Sladen St.

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
David Turin	**USEPA, OES - SEW / 617-918-1598**	**06/02/2011**
Signature of Management QA Reviewer	Agency/Office/Phone and Fax Numbers	Date

EPA Region 1
Clean Water Act
Inspection Data Entry Form: 3560EZ

Version 1.02

Inspector:	Jack Melcher	Date form completed:	11/26/2013

Section A: Facility Information						
Inspection start date:	11/19/2013	Inspection start time:	9:00			
Inspection end date (if more than one day):	11/20/2013	Inspection finish time:	3:00			
NPDES ID:	MAR041109	Federal facility?	No			
Name and Location of Facility Inspected:						
Name:	Town of East Bridgewater MS4					
Address:	100 Willow Ave					
City:	East Bridgewater	State:	MA	ZIP:	02333	
Facility Representative #1:						
Name:	John Haines	Title:	Department of Public Works Director			
Address (if off-site):	Enter text					
City:	Enter text	State:	Enter text	ZIP:	Enter text	
Phone #:	(508) 378-1620	Email:	jhaines@ebmass.com			
Facility Representative #2 (if necessary):						
Name:	Enter text	Title:	Enter text			
Address (if off-site):	Enter text					
City:	Enter text	State:	Enter text	ZIP:	Enter text	
Phone #:	Enter text	Email:	Enter text			

Section B: Compliance Monitoring Information		
Clean Water Act Section (choose from only one of the following):		
	CWA §308[A][B]: NPDES	Stormwater - MS4
	CWA §311: Oil and Hazardous Substances	Choose an item
	CWA §404: Permits for Dredge and Fill Material	Choose an item
Compliance Monitoring Type:		Audit - MS4
Compliance Monitoring Reason:		Agency Priority
	If Agency Priority, then specify priority(s):	

OECA - CAFO	☐
OECA - CAFO Region Initiative Areas	☐
OECA - CSOs w/ < 50,000 service population	☐
OECA - CSOs w/ >= 50,000 service population	☐
OECA - MS4s Phase I	☐
OECA - MS4s Phase II	☒

OECA - SSOs ≥ 10 MGD and < 100 MGD	☐
Region 1 - Environmental Justice	☐
Region 1 - Green Economy / Green Infrastructure	☐
Region 1 - Industrial Laundries	☐
Region 1 - Lead Poisoning	☐
Region 1 - Municipal Infrastructure	☒
Region 1 - Pollution Prevention & Resource Conservation	☐
Region 1 - Ship / Boat Yards	☐
Region 1 - Wet Weather	☒

Compliance Monitoring Agency Type:	EPA
Was this a Joint Compliance Monitoring Activity?	No
If Joint, which party had the lead?	Choose an item or leave blank if N/A
If State lead, what was the purpose of EPA participation?	Choose an item or leave blank if N/A

Section C: ICDS Information	
Did you observe deficiencies (potential violations) during the inspection?	Choose an item
Potential excess emission in violation of regulations:	☐
Potential failure to… … complete or submit a notification, report, certification, or manifest:	☐
… follow a permit condition(s):	☒
… follow a required sample monitoring procedure or laboratory procedure:	☐
… follow or develop a required management practice or procedure:	☒
… identify and manage a regulated waste or pollutant in any media:	☐
… maintain a record or failure to disclose a document:	☐
… maintain/inspect/repair meters, sensors, and recording equipment:	☐
… obtain a permit, product approval, or certification:	☐
… report regulated events such as spills, accidents, etc.:	☐
Potential incorrect use of a material (pesticide, waste, product) or use of an unapproved material:	☐
Potential violation of a compliance schedule in an enforceable order:	☐
If you observed deficiencies, did you communicate the deficiencies to the Facility during the inspection?	Yes
If yes, did you observe the Facility take any actions during the inspection to address the deficiencies noted?	No
If yes, what actions were taken?	Choose an item
If the Facility reduced pollution, what pollutant was reduced?	Enter text
Did you provide *general compliance assistance* in accordance with the policy on the role of the EPA inspector in providing compliance assistance during inspections?	Yes
Did you provide *site-specific compliance assistance* in accordance with the policy on the role of the EPA inspector in providing compliance assistance during inspections?	Yes

Comments:

Enter text

United States Environmental Protection Agency
Region I - EPA New England
5 Post Office Square
Boston, MA 02109-3912

Drafted Date: 12/19/2013
Finalized Date: 1/16/2014

Subj: Inspection Field Notes
Town of East Bridgewater MS4

From: Jack Melcher
Andrew Spejewski

Thru: Denny Dart

To: File

I. Facility Information

A. Facility Name: Town of East Bridgewater MS4

B. Facility Location: 100 Willow Ave
East Bridgewater, MA 02333

C. Facility Contacts: John Haines, Department of Public Works Director
(508) 378-1620, jhaines@ebmass.com

D. NPDES ID Number: MAR041109

II. Background Information

A. Date and time of inspection:
Facility entrance: November 19, 2013, 09:00
Facility exit: November 20, 2013, 15:00

B. Weather Conditions: Clear, cool

C. US EPA Representative(s): Jack Melcher
Andrew Spejewski

D. Previous Enforcement Actions: EPA Notice of Violation No. 2013-NOV-02 sent to facility following EPA observation of a contaminated stormwater outfall.

III. Type and Purpose of Inspection

EPA performed a Compliance Evaluation Inspection to gather information regarding compliance with the facility's NPDES permit.

IV. Facility Description

East Bridgewater is almost completely (except for southeast corner) urbanized, and therefore storm water discharges are covered by the NPDES General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems. The Permit became effective in May 2003 and has been administratively continued. The Town's NOI was received on July 24, 2003, and the Town has submitted annual reports for each year from 2005-2013.

The following is a summary of impaired water bodies in East Bridgewater and the reported causes of impairment: [1]

Water Body Name	ID	Impairments
Salisbury Plain River	MA62-06	Debris/Floatables/Trash*
		Aquatic Macroinvertebrate Bioassessments
		Excess Algal Growth
		Fecal Coliform - Taunton River TMDL
		Dissolved Oxygen
		Phosphorus
		Taste and odor
		Turbidity
Beaver Brook	MA62-09	Fecal Coliform - Taunton River TMDL
Meadow Brook	MA62-38	Fecal Coliform - Taunton River TMDL
Matfield River	MA62-328	Aquatic Macroinvertebrate Bioassessments
		Excess Algal Growth
		Fecal Coliform - Taunton River TMDL
		Dissolved Oxygen
		Phosphorus
		Taste and odor

A TMDL calculation was completed for the Taunton River and its tributaries in June 2011.[2]

[1] Massachusetts Department of Environmental Protection, 2012. Massachusetts Year 2012 Integrated List of Waters

[2] Massachusetts Department of Environmental Protection, 2011. Final Pathogen TMDL for the Taunton River Watershed. CN 0256.0.

V. Inspection

EPA representatives (Jack Melcher and Andrew Spejewski) contacted John Haines of Town of East Bridgewater ("the Town") by telephone on November 4, 2013 to announce the inspection. Follow-up phone calls and e-mails established the exact date and time of the inspection

On November 19, 2013 at 09:00, EPA representatives met Town representatives at Town Hall. Mr. Spejewski presented EPA inspector credentials. The following Town representatives were present:

- John Haines, Department of Public Works Director;
- Rob Kenn, Department of Public Works Operations Manager;
- Carter Fahy, consultant with Environmental Partners Group;
- Bob Philbrick, Board of Health Agent; and
- George Samia, Town Administrator.

Town representatives provided a general description of East Bridgewater. The Town has a population of about 15,000. The Town does not have municipal sewer service; waste water treatment is provided by septic systems. Facilities operated by the Town include a middle school, a high school, a library, a Department of Public Works (DPW) yard, a police station, a fire station, and a community center. The Town does not operate a transfer station or a landfill.

Until recently, the middle and high schools discharged approximately 9,000 gallons per day of wastewater to a NPDES-permitted discharge. Treatment of wastewater has since been converted to a permitted groundwater discharge.

The Town investigated the creation of a municipal sewer system, but for reasons of cost and the lack of a suitable location for a large groundwater discharge, the Town voted not to pursue such a system.

The Town has been active in monitoring compliance of septic systems with state regulations and has received $4.4 million from the Massachusetts Water Pollution Abatement Trust to offer low-interest loans to homeowners for septic system improvements.

East Bridgewater's municipal drinking water is supplied by five wells. Recently, the Town has added sand filters to eliminate high levels of iron and manganese that created a maintenance nuisance.

East Bridgewater has about 350 stormwater outfalls.

Massachusetts Department of Transportation is responsible for maintenance of all of Route 18, which passes through the center of town.

MS4 Program Organization
There is no formal MS4 program organization or committee. Most of the program is implemented by the DPW, though the Town Administrator signs annual reports. The DPW, Health Department, and Conservation Agent all work together, and have many informal meetings. Subjectively, during the inspection the cooperation among them appeared good and they were knowledgeable about each other's work.

Public education and outreach / public involvement and participation
Public involvement efforts identified by the Town include:

- Scout groups performing open space clean-up projects;
- Earth Day open space clean-up projects;
- "Adopt an Island" program for maintenance of traffic medians;
- Hazardous waste collection day;
- Conservation commission has a liaison to the Taunton River Watershed Alliance;
- DPW presentations at Garden Club meetings; and
- DPW presentations at Ladies' Book Club meetings.

Mr. Haines said he has tried to get Boy Scouts and other groups to do storm drain stenciling, but has not had any takers so far.

Illicit Discharge Detection and Elimination
East Bridgewater obtained funding from the state (possibly from as a SRF loan) for $37,500 from the state to perform mapping of its topography and storm water infrastructure. The mapping data, stored on a server maintained by Environmental Partners Group, is available to applicable Town staff members on computers and tablets. Infrastructure characteristics such as types of materials and condition of assets were identified when the mapping was performed. The Town plans to use the mapping to perform asset management for storm water infrastructure and other assets; the Town is beginning to use a service called "Utility Cloud" for this management.

The Town had a report, prepared by Environmental Partners Group in 2010, describing each MS4 outfall. Photographs were included of all outfalls, but screening for illicit discharges was performed for only a subset (approximately 70) of the outfalls. A smaller subset was identified as possible sources of illicit discharges. A copy of this report, without appendixes, was provided by the Town after the inspection, and is in the inspection file.

The Town does not have an on-going program by which outfalls are screened for dry-weather flow and then investigated as necessary. The DPW investigates outfalls primarily to remove blockages when flooding is reported. The DPW has begun a program to assess each outfall for maintenance condition, etc., but is not checking for signs of illicit connections during these assessments.

The Board of Health (BOH), in its efforts to enforce septic system regulations, has encountered septic systems that were connected to storm drains. Bob Philbrick provided a list of eight connections of sewage to receiving waters that have been eliminated (Attachment A). One of these connections was the permitted discharge from the schools,

and is not an illicit discharge. Of the seven illicit discharges identified, four were discovered in a Title 5 septic system inspection, one was discovered by DPW workers, and two were discovered following sampling by the Massachusetts Department of Environmental Protection (MassDEP).

Bob Philbrick states that the BOH has sufficient authority to require that illicit connections be eliminated and all waste water managed using approved Title 5 septic systems. East Bridgewater has a "superseding regulation" that enables the BOH to require that any septic system owner have a Title 5 inspection, even if the property is not being transferred. Also, the Town has the authority to fine homeowners for not repairing septic systems in a timely manner; in at least one case, fines reached $4,800, according to Mr. Philbrick. The Town has a computer-based septic system management program that tracks failed systems, to ensure that they are repaired.

Town representatives described the detection of contamination and subsequent investigation of an outfall on West Union Street into Meadow Brook. In 2008, MassDEP contacted the Town to report that contaminated flow had been observed at the outfall. The BOH sent letters to every homeowner on the street, and conducted dye tests in drains and toilets. An illicit connection at 68 Pearl Street was identified. The homeowner was ordered to remove the connection, and the Town was satisfied that the disconnection was performed. The inspection file has copies of the letter requesting dye-testing, the order to remove the illicit connection, and the application to repair the connection. In 2009, MassDEP again contacted the Town to report that the contamination persisted. The Town suspected that a business located on West Union Street was responsible for the illicit connection and conducted dye testing at that business, but no connection to the storm drain was found. The Town took no further action on the contaminated outfall until EPA contacted the Town with a Notice of Violations (2013-NOV-02), received in May 2013.

After receiving the NOV and a follow-up phone call from EPA, DPW hired a contractor to use closed-circuit television to inspect the drain line. DPW found a lateral plumbed into the drain line that led to previously unknown buried structure on private property. Evidence of flow entering the structure was present from one of the four pipes observed. This pipe was cemented closed in early August 2013.

The Town reports that MassDEP has sampled the outfall in the fall of 2013, but the Town has not been contacted with results of this sampling. The Town interprets the lack of follow-up from MassDEP as an indication that no contamination was observed and that all illicit connections have been removed. The Town has not performed any sampling themselves. The Town has not prepared a report documenting the investigation of the outfall on West Union Street, but the video from the camera inspection is available.

Pollution prevention and good housekeeping in municipal operations

The DPW maintains roads, storm sewers, and parks and other green spaces in town. The School Department does some maintenance of school grounds; some responsibility is shifting to the parks/rec group in the DPW.

Each year, the Town cleans half its catchbasins - either on the east side of Route 18 or on the west side of Route 18. Catchbasin cleaning is tracked using a list of streets. When the catchbasins are cleaned, the street is checked off. The Town has about 1,700 catchbasins. Certain problem catchbasins are cleaned every year. Materials removed from catchbasins are sent to a private facility.

All streets are swept with an Elgin brush sander: once in the spring and then spot-sweeping in the fall for leaves. Sweeping is tracked with a list of streets, with each street's date of sweeping written on it. A copy of one sheet is in the inspection file. Most street-sweeping materials and catchbasin materials are sent to a private facility in town for disposal.

The Town has stopped applying sand to its roads in the winter - it applies only salt. As a result, sweeping mainly picks up trash and broken pavement. Sidewalks are not swept, since they do not get sandy. Some salt application vehicles have ground-speed control. Spinners for salt vehicles are set to a slow speed to keep salt from being thrown off of the road. No chloride issues at the wells are known. The Town's salt pile is covered, but loading of application vehicle occurs outside.

The Town reports that fertilizers are applied sparingly using time-release formulations according to manufacturer's specifications. Pesticides are applied in a very limited manner; at least one town employee has a pesticide application license.

The water treatment facility and the community center have structural storm water control measures (e.g., detention basins, water quality swales) that the Town is responsible for maintaining. Once completed, the new High School will have storm water control measures as well.

All vehicle maintenance is performed at the fleet maintenance building at the DPW yard.

The Town maintains an 8,000 gallon oil tank at the fire station. Town representatives were not sure if a Spill Control Countermeasure (SPCC) plan had been completed for this tank.

The EPA inspection team, along with Mr. Haines and Mr. Kenn, visited the fire station at about 11:30. Refer to Attachment B, Photos 1-3 for pictures of the oil tank. The inspection team met briefly with the fire chief, who also did not know of an SPCC plan for the tank, but he had an SPCC information sheet and he indicated that he would follow up with the matter.

The EPA inspection team, along with Mr. Haines and Mr. Kenn, visited the DPW yard at about 12:00. Refer to Attachment B, Photos 4-9 for pictures of the DPW yard. Refer to Attachment C for an aerial photo of the DPW yard.

The DPW yard is located at the end of Willow Avenue, and consists of five buildings and several outdoor material storage areas. Two buildings in the lower end of the facility are now used only for storage and parking. Vehicle maintenance is done in the newer building at the upper (northeastern) end of the facility. The interiors of the two storage buildings were neat and no signs of spills or leaks. The maintenance building was neat. Most liquid storage was maintained on spill-containment pallets. There were floor drains in this building. Personnel stated that the drains went to a pump-out tank next to the building; the tank was observed but not opened.

Outdoor material storage area 1 (Photos 4 and 5) contained construction materials such as concrete blocks and manhole structures. Outdoor material storage area 2 (not pictured) included materials such as sands and loam that may be transported by storm waters. Salt is stored inside, but is loaded on trucks for spreading outdoors (Photo 6). No facilities are provided for washing of vehicles and Mr. Haines stated that vehicles are not washed at all.

The DPW yard is graded so that storm water from the salt loading area and outdoor material storage area 2 flows across Willow Avenue into the Willow Brook (Photos 7-9). No control structures are provided to treat storm water and erosion is visible near the outfall (Photo 8).

The inspection team left for the day at approximately 13:00.

Construction site storm water runoff control / Post construction storm water management in new development and redevelopment

The inspection team returned to Town Hall on November 20 and met with the following Town representatives:

- John Haines, Department of Public Works Director;
- Carter Fahy, consultant with Environmental Partners Group;
- Bob Philbrick, Board of Health Agent; and
- John W. DeLano, consultant with John W. DeLano & Associates, Inc.

John DeLano provides about 20 hours per week consulting services for the East Bridgewater Planning Board and the East Bridgewater Conservation Commission ("ConComm") reviewing erosion control plans, reviewing post construction storm water control plans, inspecting construction sites, and working with developers to make sure that erosion control measures are implemented properly. He has been doing the same work since about 1994.

Mr. DeLano will typically get a copy of plans submitted to the Planning Board. He keeps copies of correspondence and phone logs in his consulting office, though may send copies of key correspondence to the Town for their files.

Mr. Delano will review drainage calculations for post-construction control, as well as during construction erosion control plans.

The Town allows cluster development; it has been used for a retirement community.

Mr. DeLano does inspections of construction sites for erosion controls. Typically he does not document them, as he is present on sites so often (once per week at times). He said he has not had any issues getting site operators to comply with requests to improve erosion control, but has had to educate some operators on how to do things properly.

The Conservation Commission has the authority to issue "Stop Work" orders if erosion control measures are not implemented properly. Mr. DeLano thought that due to the large amount of wetlands in the town there were very few sites not subject to ConComm jurisdiction. If there were issues at a non-jurisdictional site, the Planning Board could ask the developers in for a meeting.

The Town has developers of subdivision roads set aside money in a bond to cover potential costs of storm water controls when the binder course of the new road has been laid. The bond is not returned and the lots are not released for sale until the post construction storm water controls have been installed.

Responsibility for operations and maintenance of storm water controls depends upon whether the new roads are adopted by the Town or maintained as private ways - the Town is only responsible for maintaining storm water controls on roads that it adopts. The Town does not have a list of storm water control measures for which it is responsible for maintaining. Mr. DeLano stated that he sometimes checks storm water controls after storms, but that he does not have a complete list or stormwater control structures, nor does he check controls located away from roads.

Town representatives stated that the Town frequently does not receive copies of as-built drawings for installed storm water controls.

Mr. DeLano discussed working with the operators of the new High School construction project. He stated that it took threats of formal action to get them to install temporary sediment basins on the site, though things improved when the contractor brought in a new employee came in to oversee erosion control. The temporary basins had been removed by the time of the EPA inspection.

The EPA inspectors reviewed a list of recently approved developments and selected two developments for further review.

The first development reviewed was Christina Drive, an approximately ten-lot subdivision with plans on file dated 1999. Christina Drive is the most recently developed road to be accepted by the Town. An inspection report written by Mr. DeLano was on file, documenting an inspection and follow-up with the contractor in 2001. Although an overview plan was available for the whole development, detailed drawings were not available for all sections of the project. No as-built drawings of the storm water control measures were available. The Town file did not include documentation of the Town's

review of proposed post construction storm water controls, but Mr. DeLano says that he has such records at his office.

The EPA inspection team and Mr. DeLano visited Christina Drive at about 12:15. Two storm water controls were inspected. Refer to Appendix B, Photos 10-13 for pictures at Christina Drive. The concrete outflow structure on control 1 appeared to be free from debris and functioning properly. The berm on control 1 had some trees beginning to grow which could eventually compromise functioning, but these tree were still small (about 1" trunk diameter) (Photo 10). A sediment forebay of control 2 appeared to be clear of debris and functioning properly (Photo 11). The swale of control 2 appeared to be clear of debris and functioning properly (Photo 12). The outlet structure of control 2 appeared to be in good condition (Photo 13).

The second development reviewed was Victory Lane, an approximately six-lot subdivision that is in the final stages of construction. The road binder course had been installed, but homes on some individual lots were still under construction. An inspection report by Mr. DeLano documenting a site visit and discussion with operators in April 2007 was included in the Town file [a copy is in the inspection file]; Mr. DeLano said that he had more such records at his office. Detailed drawings were available of the road and storm water controls. The Town file did not include documentation of the Town's review of proposed post construction storm water controls, but Mr. DeLano says that he has such records at his office.

The EPA inspection team and Mr. DeLano visited Victory Lane at about 12:45. EPA inspectors observed Mr. DeLano while he inspected the erosion control measures installed at the site. Mr. DeLano noted that a filter roll installed as a perimeter barrier was somewhat degraded, but still adequate considering the small drainage it received and the stretch of undisturbed woodland behind it. A catchbasin serving as a yard drain appeared to be installed too high to be useful, and Mr. DeLano said that he would speak with the developer. A lot on which construction of a home had been completed had exposed soil. Mr. DeLano did not know how long the soil had been exposed, but he said that he would contact the developer and see that the soil was covered. A basin at the end of the cul-de-sac labeled on the plans as an infiltration basin was filled with standing water (Appendix B, Photo 14). Mr. DeLano said that he would contact the develop and see that the basin was regarded before construction was concluded. Mr. DeLano generally appeared knowledgeable about appropriate erosion controls and maintenance.

Exit Briefing

An exit briefing was held at Town Hall at about 14:00 with the following Town representatives:

- John Haines, Department of Public Works Director;
- Carter Fahy, consultant with Environmental Partners Group;
- Bob Philbrick, Board of Health Agent;
- John W. DeLano, consultant with John W. DeLano & Associates, Inc.; and
- George Samia, Town Administrator.

Attachment D provides a summary of the exit briefing. This summary was emailed to the facility (along with a copy of the Region 1 IDDE protocol) on November 25, 2013.

EPA representatives left the facility at 15:00.

Attachment A

List of connections of sewage to receiving waters that have been eliminated.

COLER & COLANTONIO INC
ENGINEERS AND SCIENTISTS

PROJECT NO
SUBJECT
LOCATION

CALC BY
DATE
CHECKED BY
DATE

LOCATION	METHOD OF DISCOVERY.	TYPE OF DISCHARGE	ACTION TAKEN
626 Barthel St Jaffe Corin 1996	TS insp. report sale	severage to catch basin to Mattfield River	order to disconnect repaired system
57 N. Central St 2004	DPW workers.	cesspool to catch basin to Matfield river.	correction order system upgraded
77 N. Central St. 2013	TS report / sale	cesspool to drainline to Matfield river.	upgrade in progress
85 N. Central St. 2013	TS report / sale	cesspool to drain to Matfield river	upgrade complete.
89 N Central St 2002	TS report / sale	cesspool to drain. to Matfield	upgrade complete
68 Pearl St.	DEP. / dye.	overflow to street drain.	order to disconnect completed.
175 West Union St.	DEP. / Camera	over flow to street drain.	DPW contracted disconnect
High School & Central School	surface water discharge permit expired.	Matfield River	New WWTF on line.

SHEET OF SHEETS

Attachment B

Inspection Photos

Attachment B - Photos

East Bridgewater MS4 Inspection

November 19-20, 2013

Photo	Date	Location	Subject
1	11/19/2013	Fire station	Oil tank
2	11/19/2013	Fire station	Oil tank
3	11/19/2013	Fire station	Oil tank
4	11/19/2013	DPW yard	Beside “back barn”
5	11/19/2013	DPW yard	Material storage area
6	11/19/2013	DPW yard	Salt shed and loading area
7	11/19/2013	DPW yard	Willow Street
8	11/19/2013	DPW yard	Outfall from Willow Street
9	11/19/2013	DPW yard	Outfall from Willow Street
10	11/20/2013	Christina Drive	Berm of stormwater control 1
11	11/20/2013	Christina Drive	Forebay of stormwater control 2
12	11/20/2013	Christina Drive	Swale of stormwater control 2
13	11/20/2013	Christina Drive	Outlet structure of stormwater control 2
14	11/20/2013	Victory Lane	Infiltration basin

All photographs taken by Jack Melcher.

Photo	Date	Location	Subject
1	11/19/2013	Fire station	Oil tank

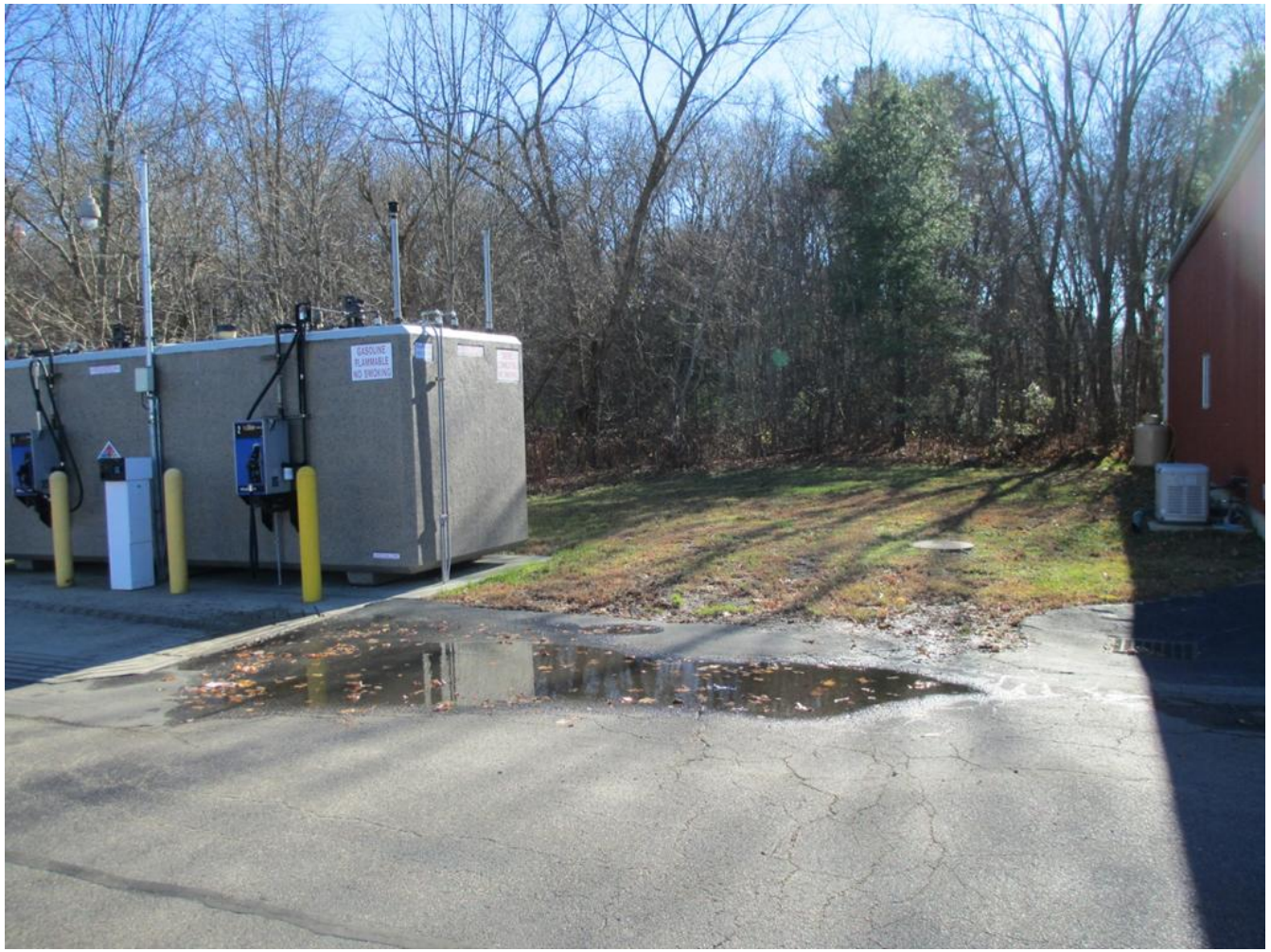


Photo	Date	Location	Subject
2	11/19/2013	Fire station	Oil tank

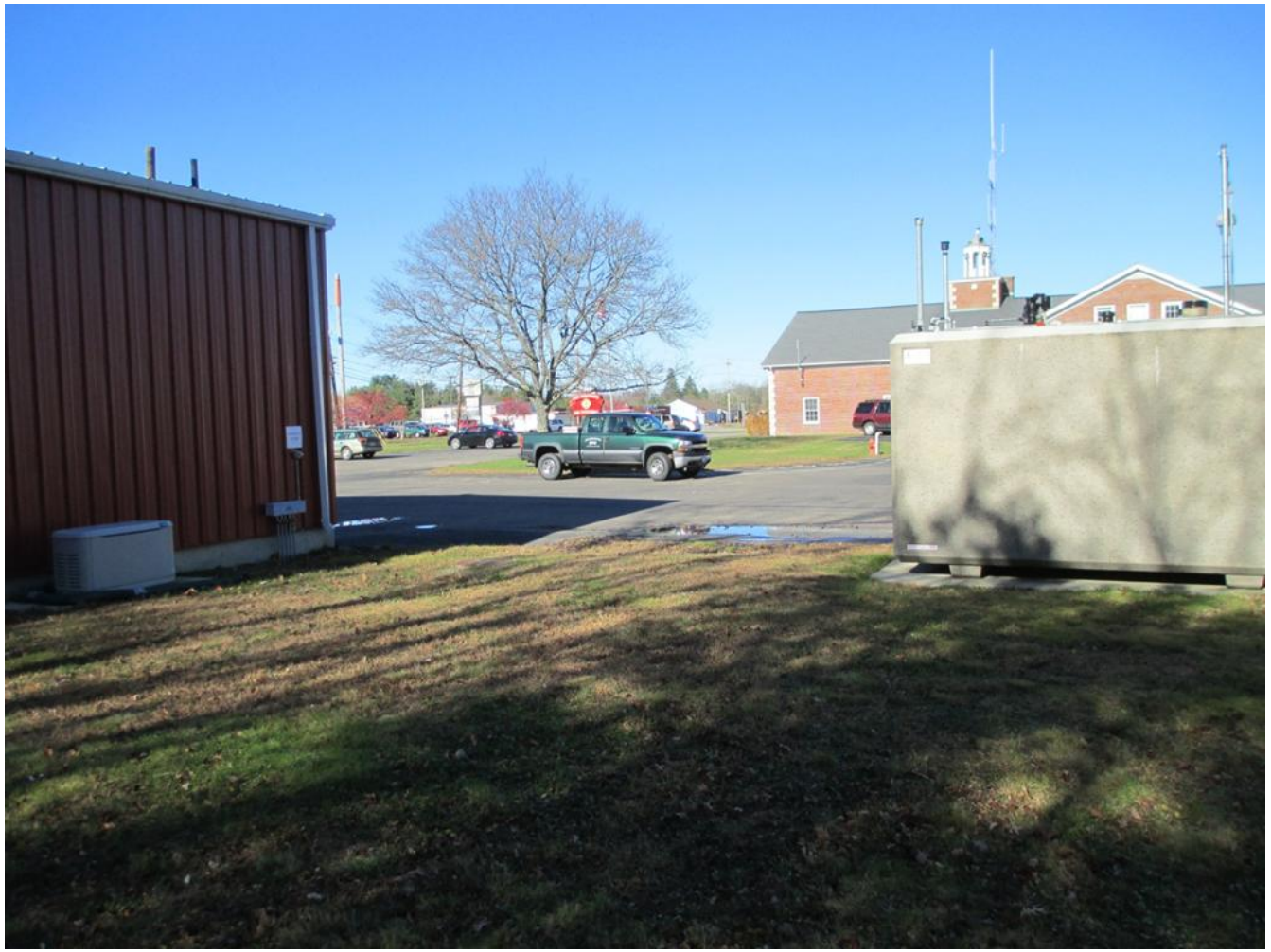


Photo	Date	Location	Subject
3	11/19/2013	Fire station	Oil tank

Photo	Date	Location	Subject
4	11/19/2013	DPW yard	Material storage area 1

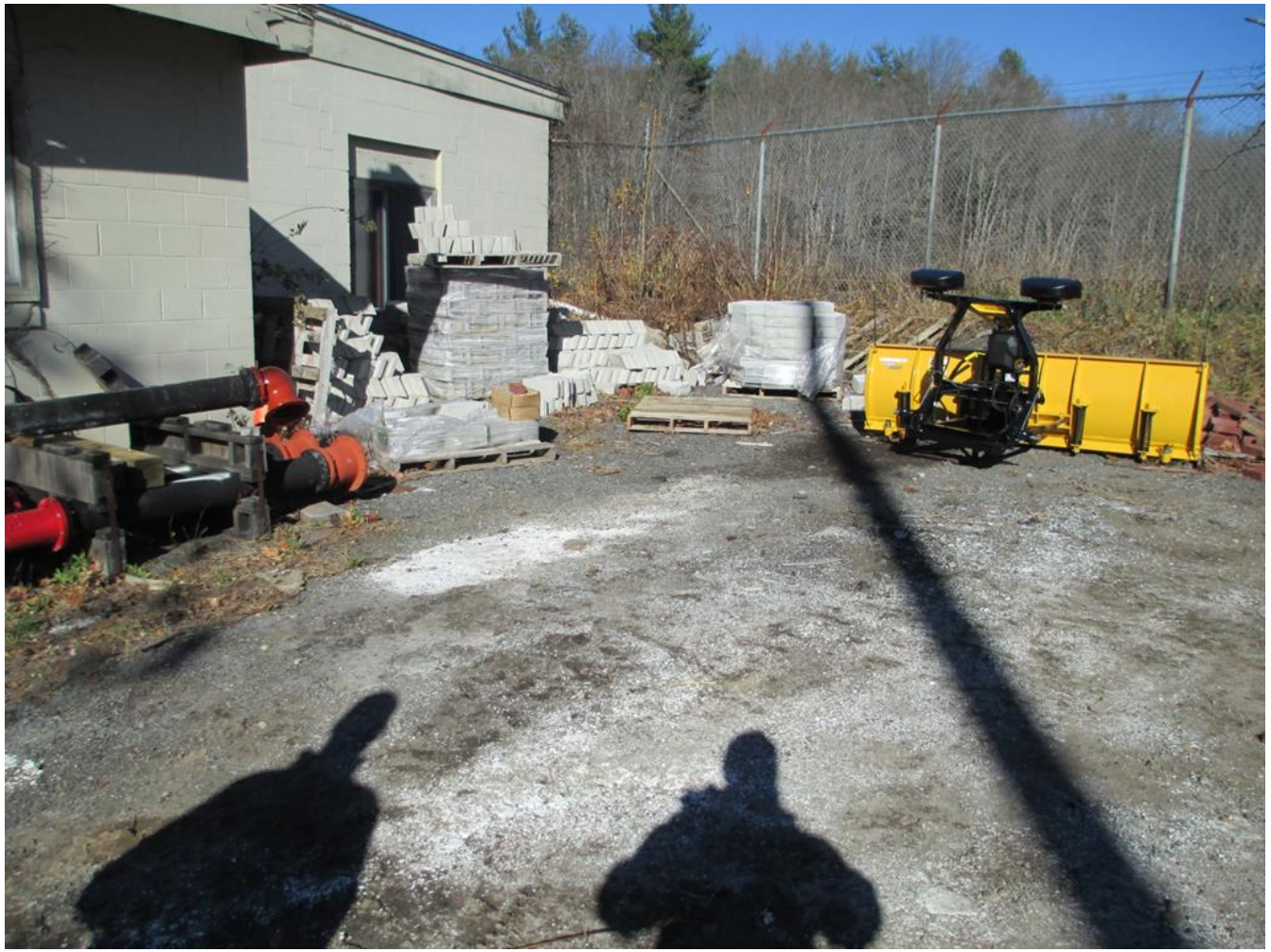


Photo	Date	Location	Subject
5	11/19/2013	DPW yard	Material storage area 1

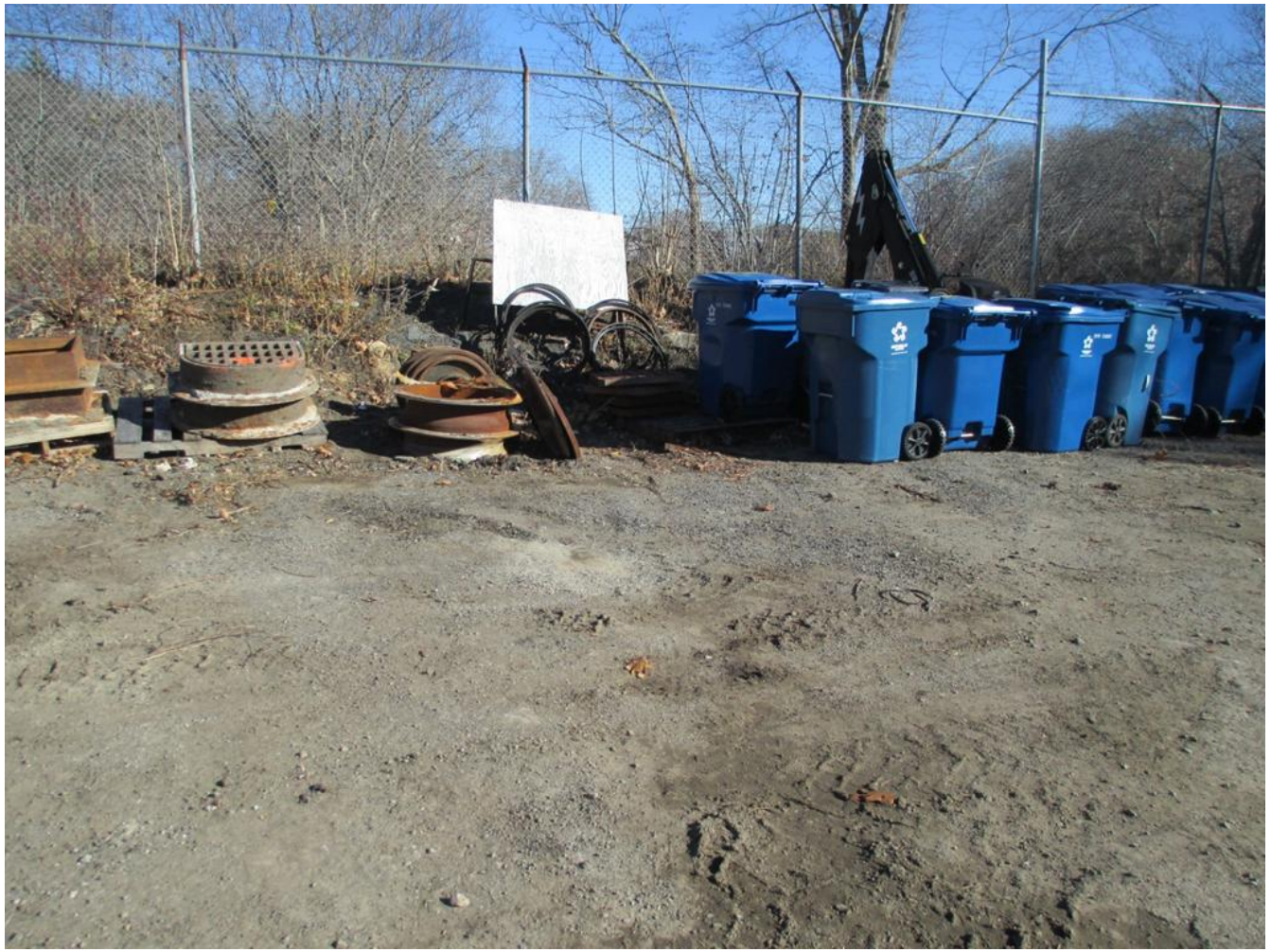


Photo	Date	Location	Subject
6	11/19/2013	DPW yard	Salt shed and loading area

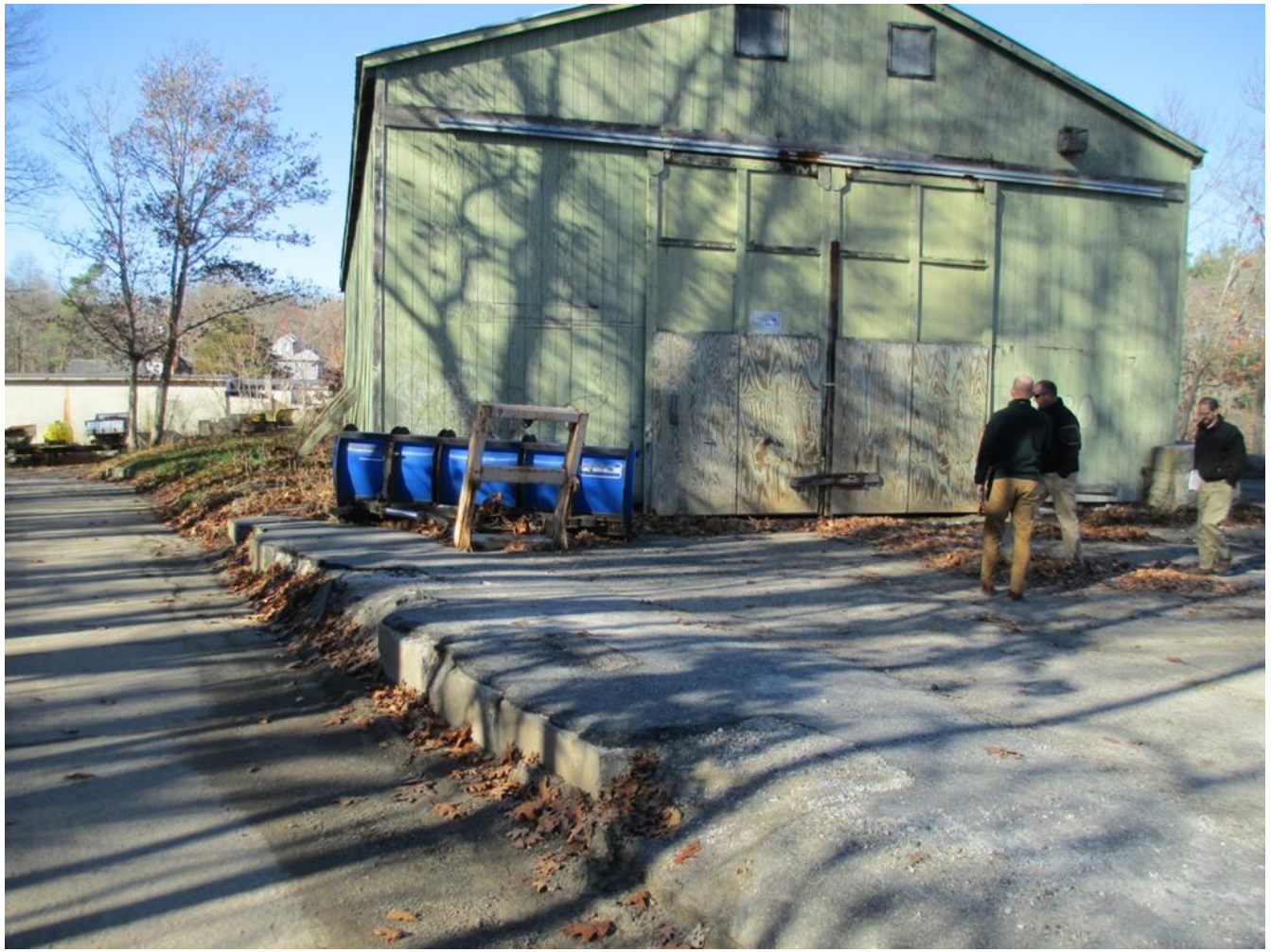


Photo	Date	Location	Subject
7	11/19/2013	DPW yard	Willow Street

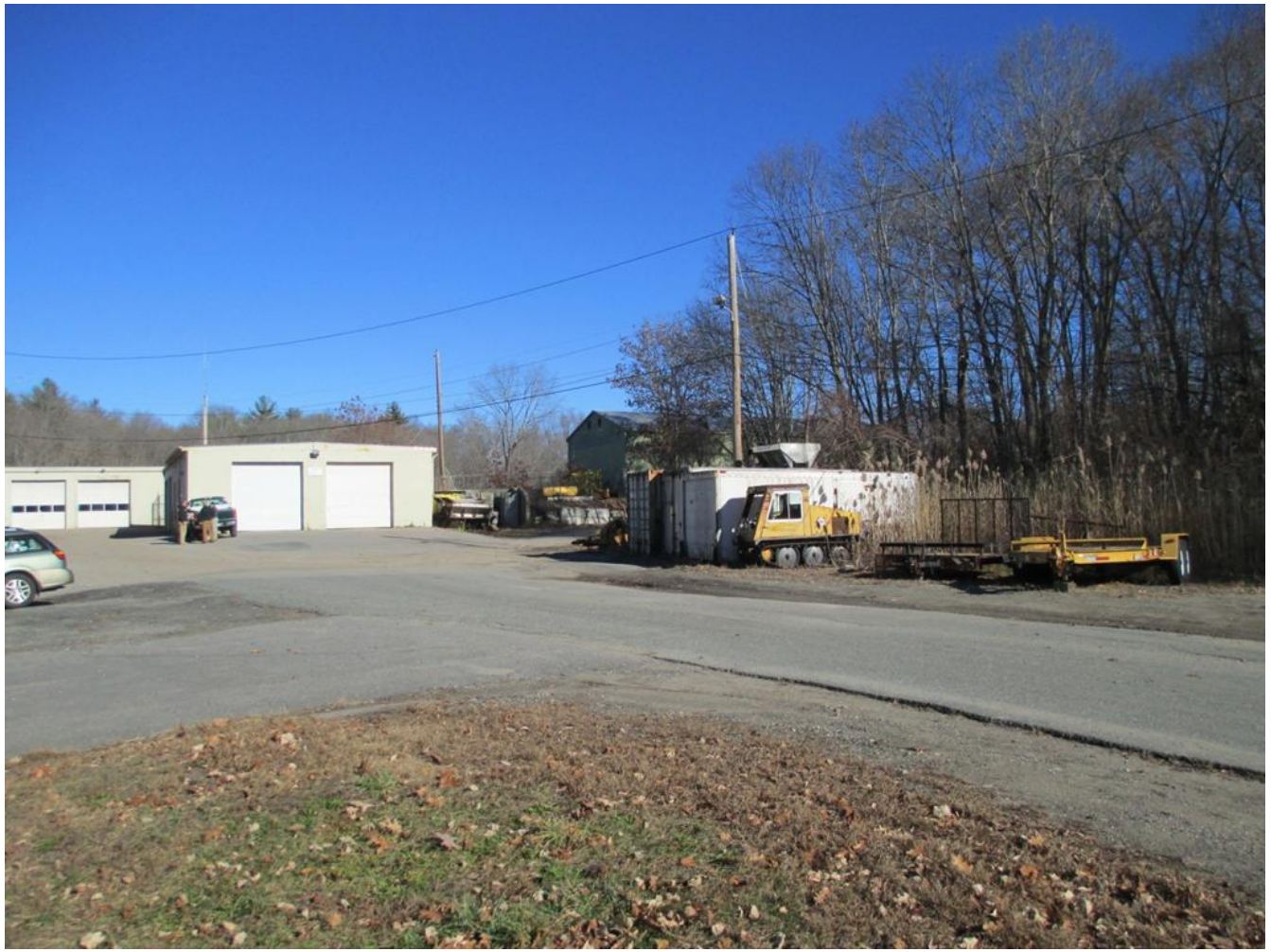


Photo	Date	Location	Subject
8	11/19/2013	DPW yard	Outfall from Willow Street

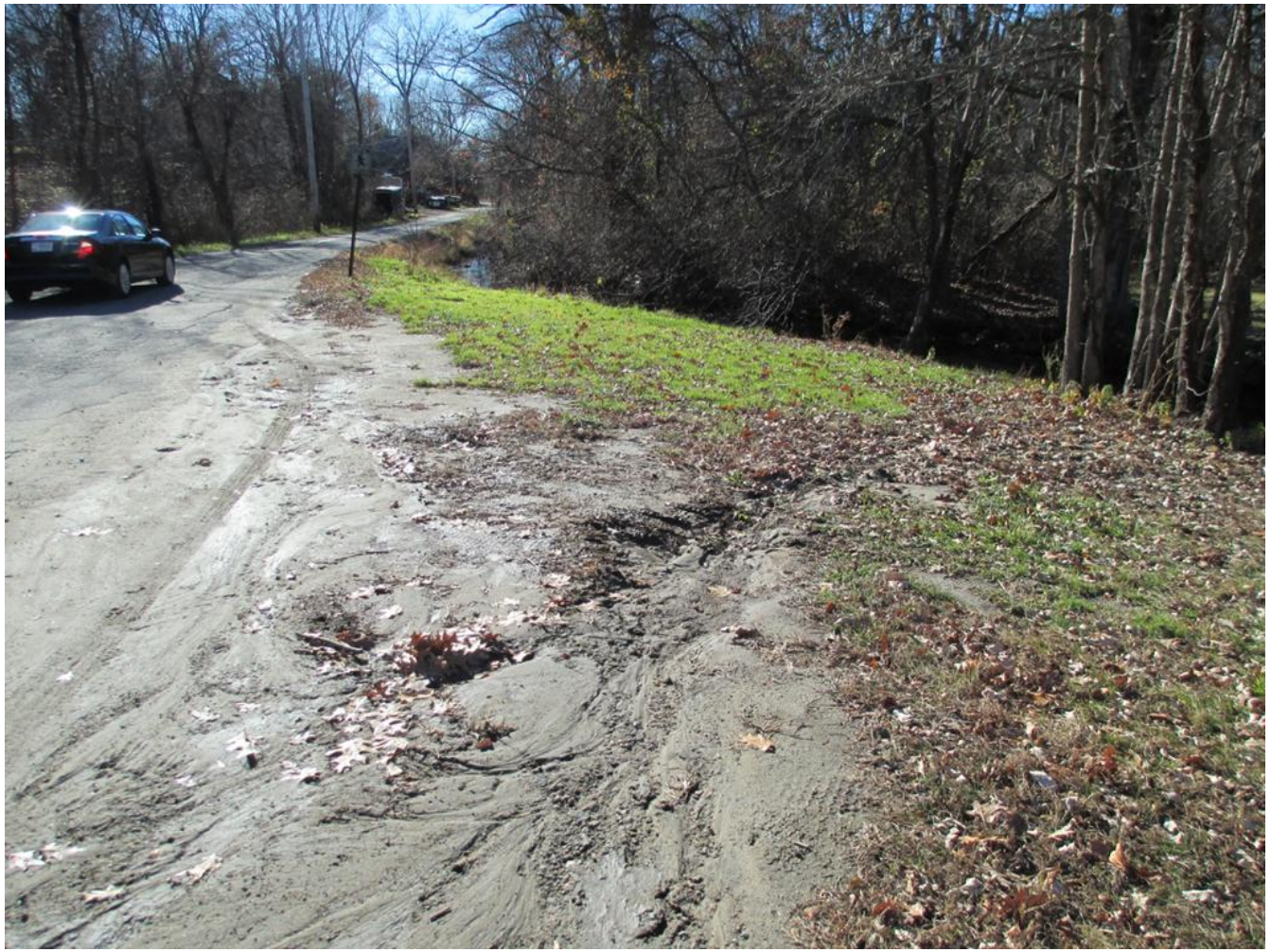


Photo	Date	Location	Subject
9	11/19/2013	DPW yard	Outfall from Willow Street

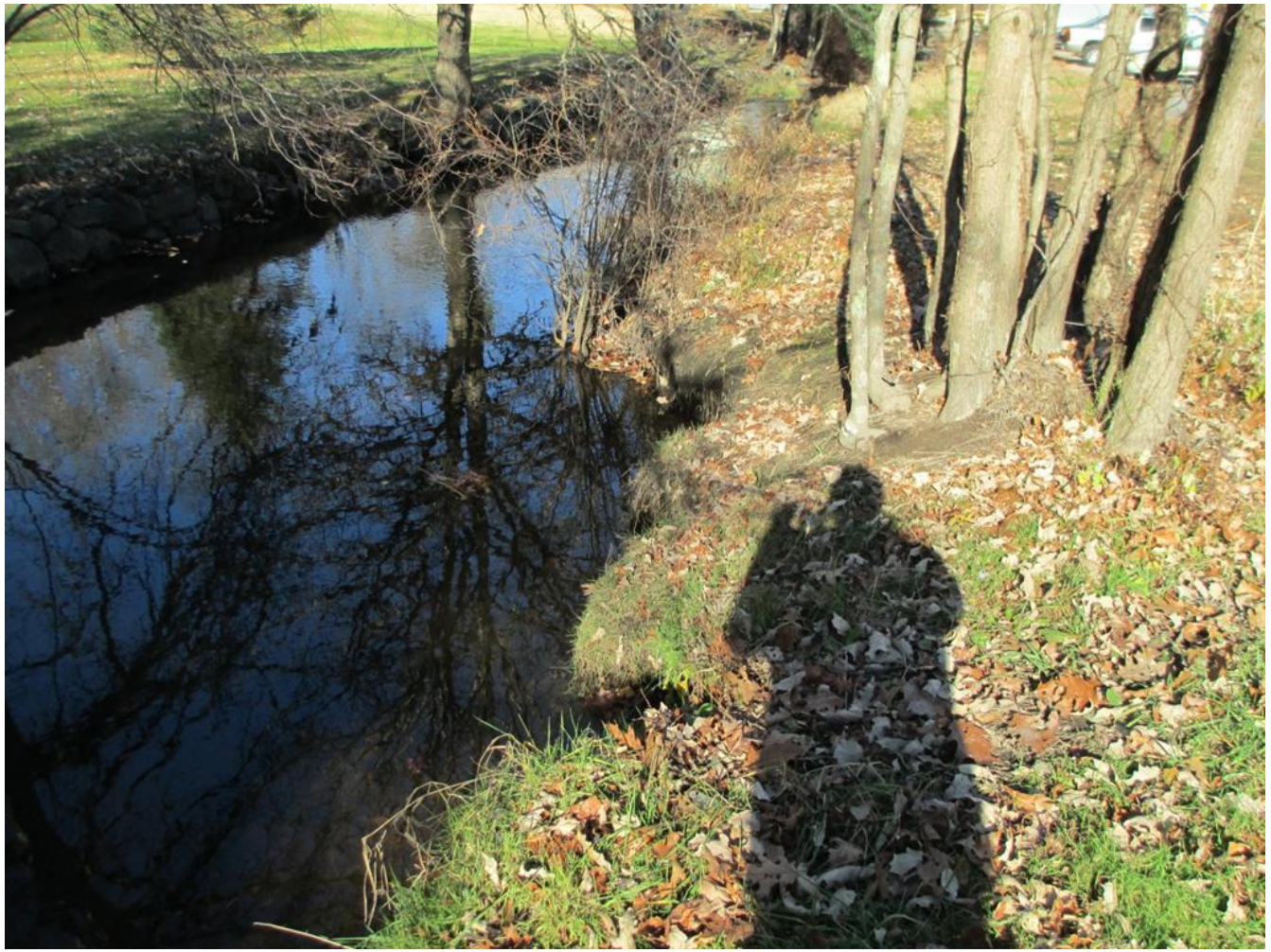


Photo	Date	Location	Subject
10	11/20/2013	Christina Drive	Berm of stormwater control 1

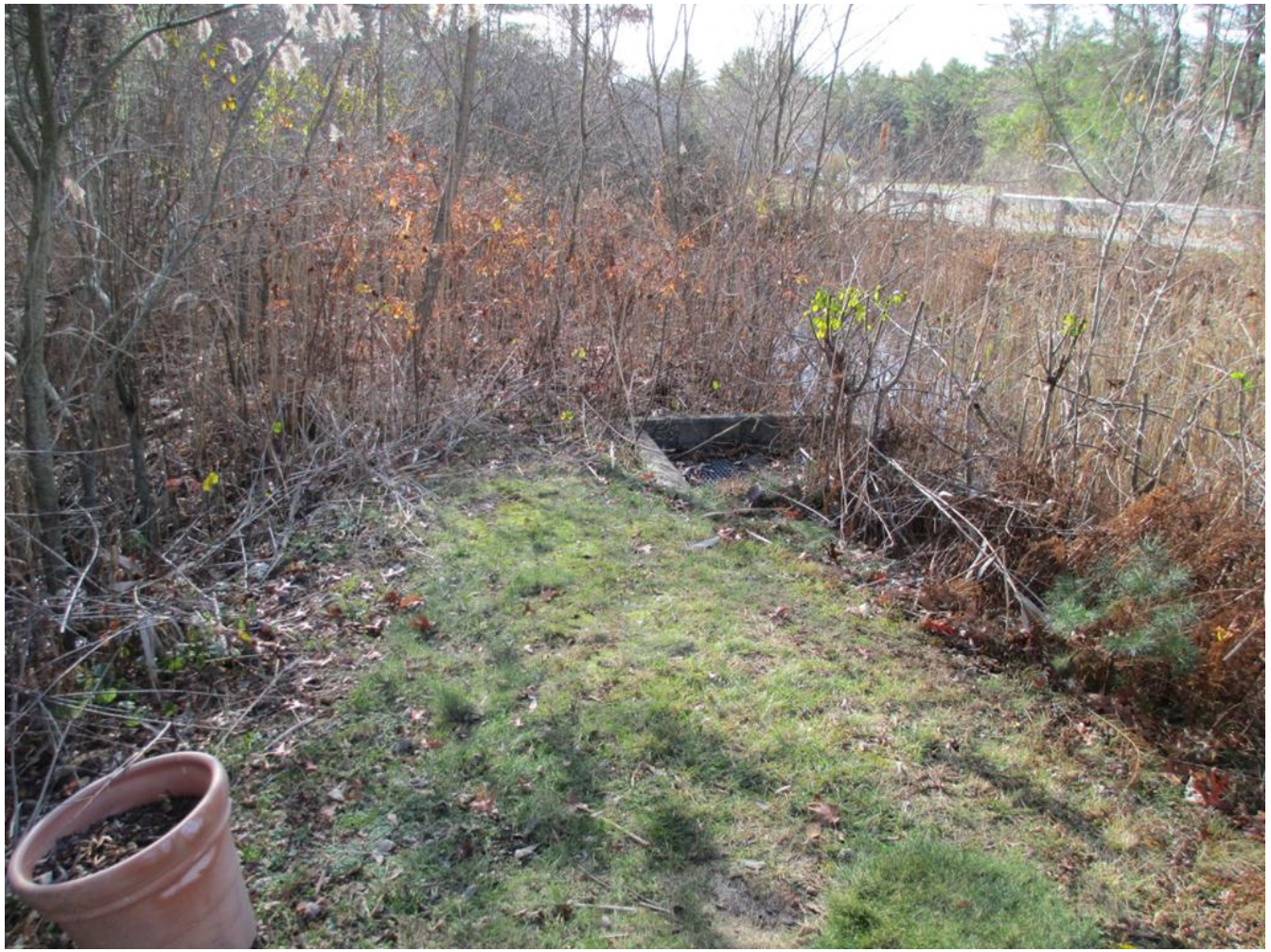


Photo	Date	Location	Subject
11	11/20/2013	Christina Drive	Forebay of stormwater control 2

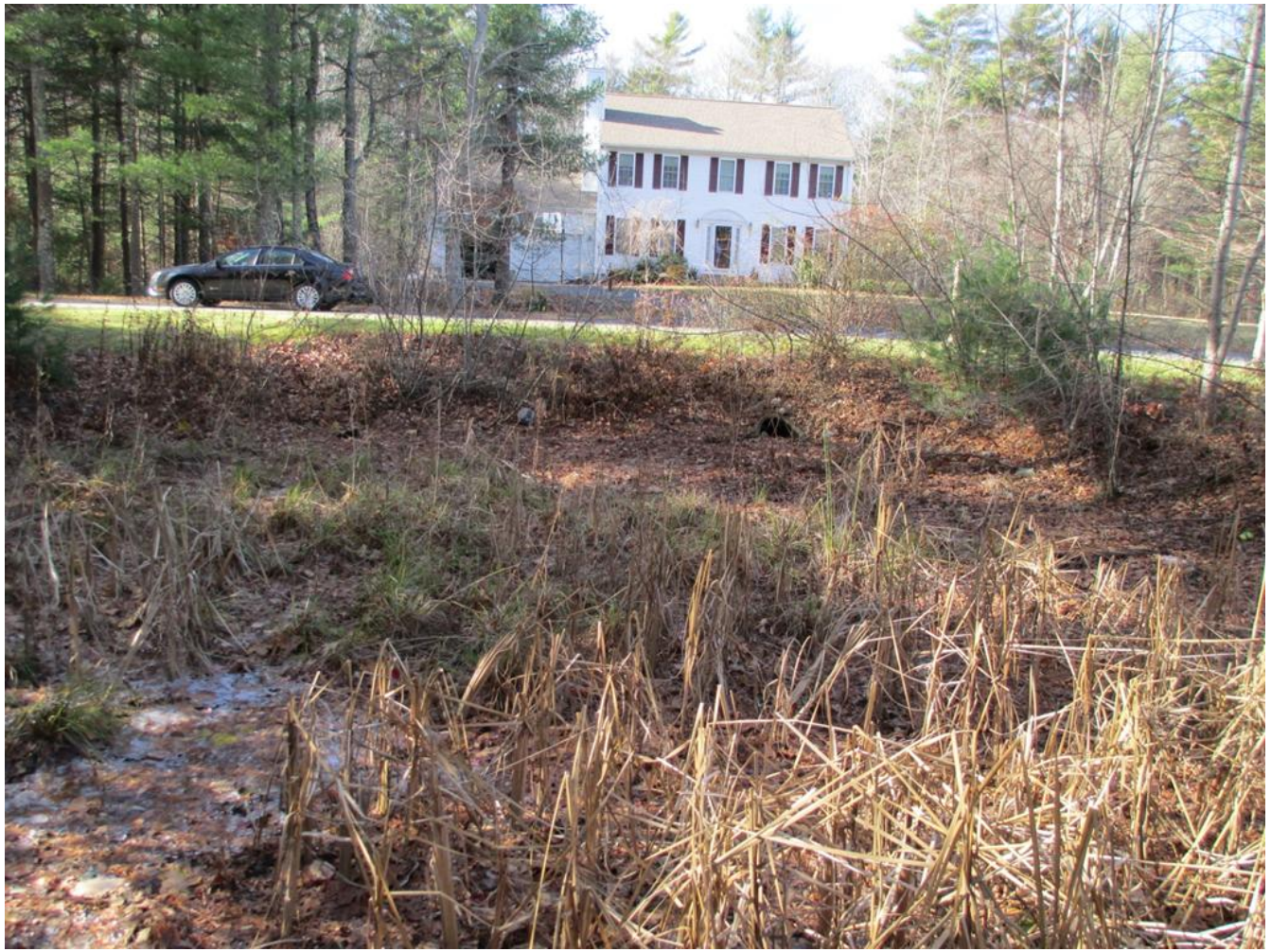


Photo	Date	Location	Subject
12	11/20/2013	Christina Drive	Swale of stormwater control 2

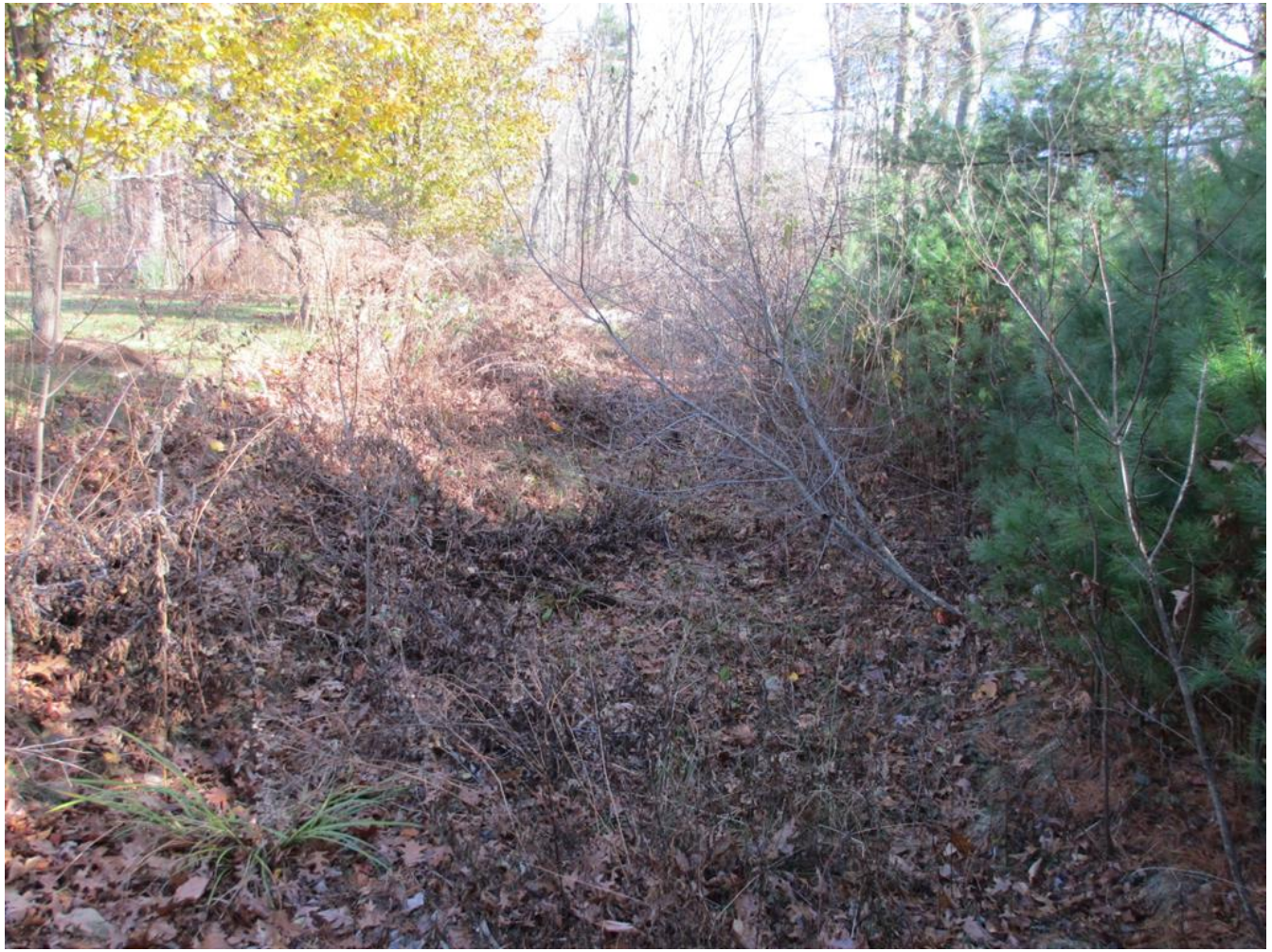
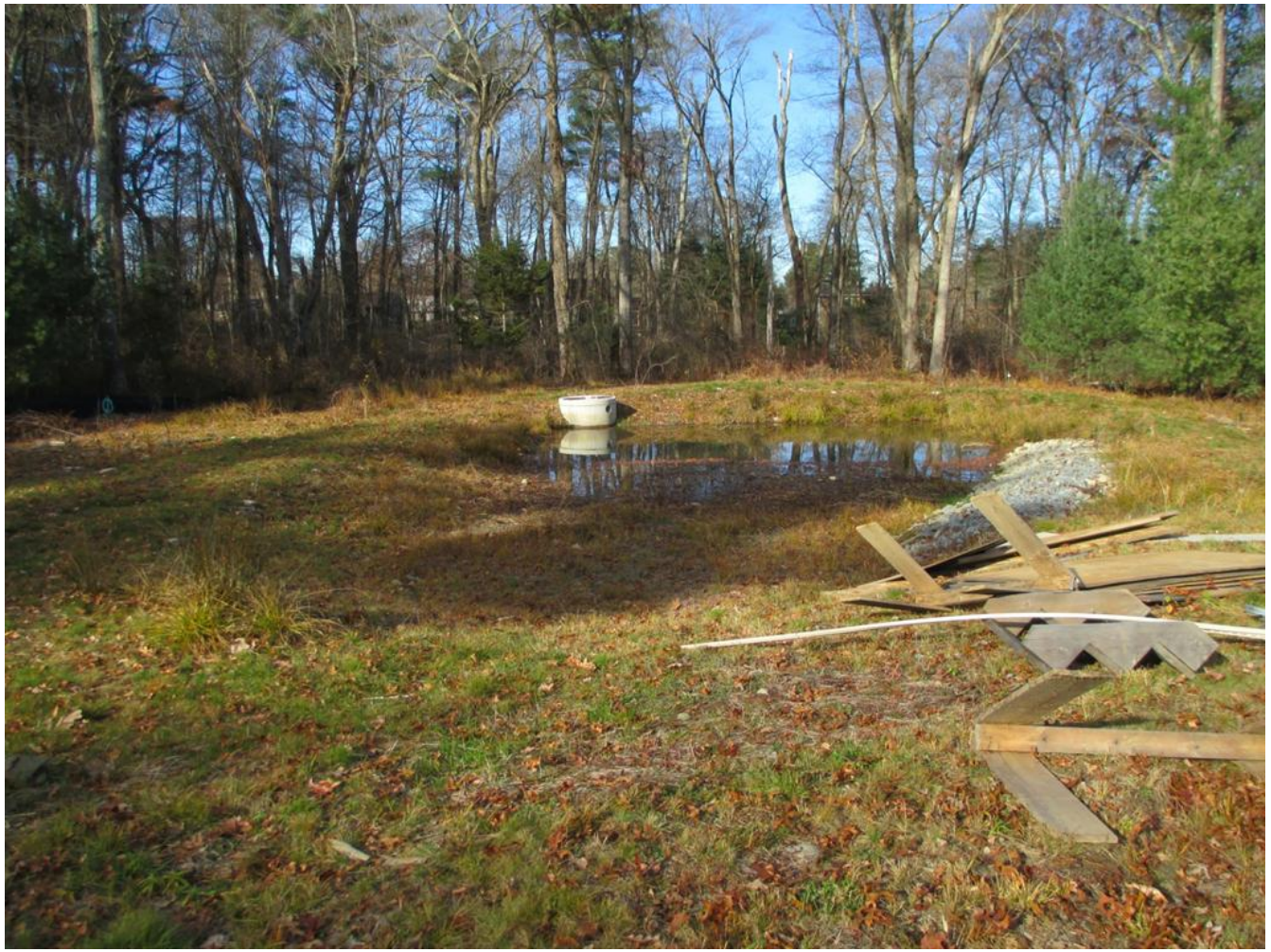


Photo	Date	Location	Subject
13	11/20/2013	Christina Drive	Outlet structure of stormwater control 2

Photo	Date	Location	Subject
14	11/20/2013	Victory Lane	Infiltration basin



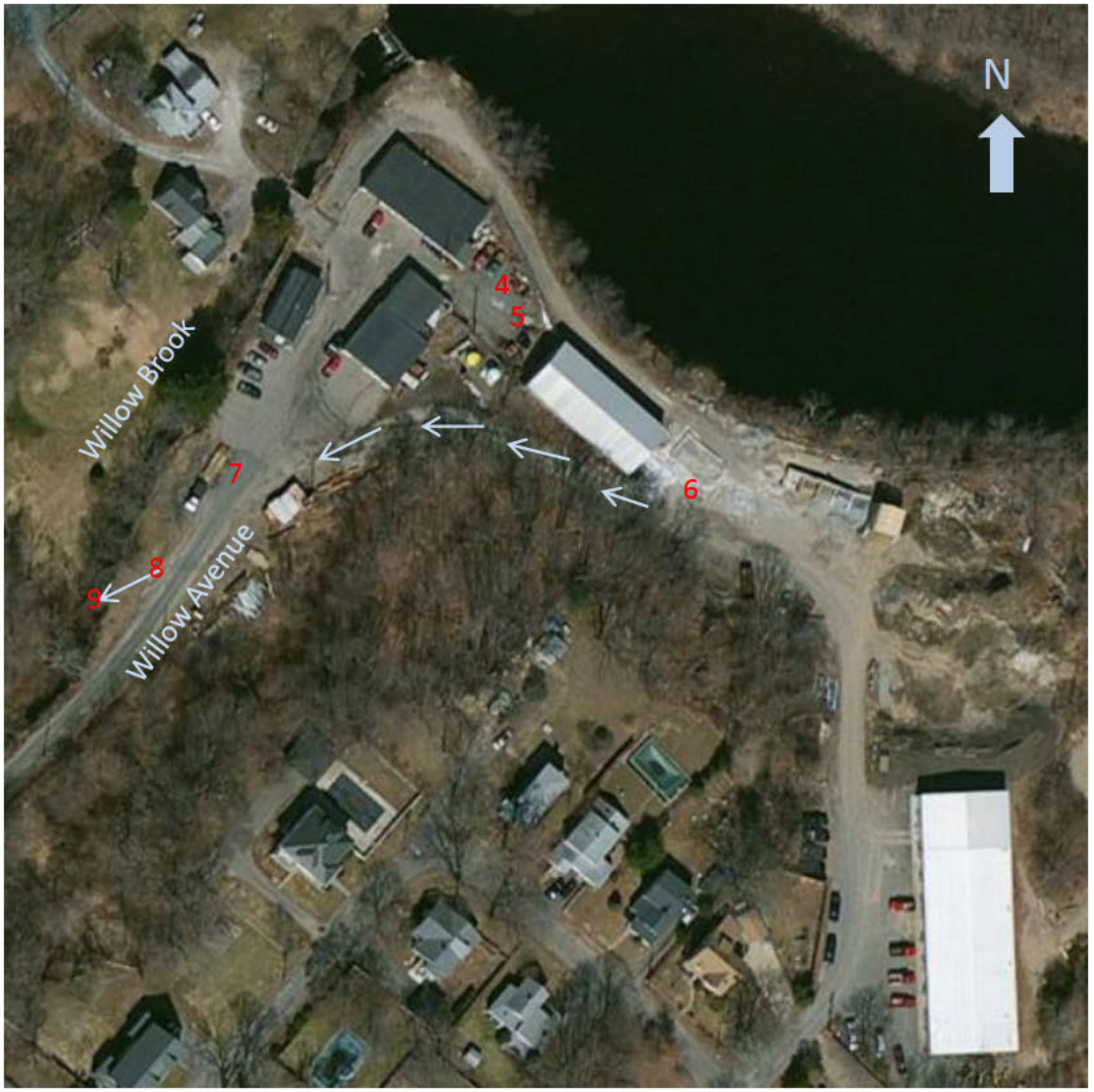
Attachment C

Aerial photo of the DPW yard

Aerial photo

DPW Yard

Source: 2008 Bing Map
Microsoft Corp.



Attachment D

Summary of the exit briefing

Attachment D

Hi John,

Thanks for your cooperation with EPA's audit of East Bridgewater's MS4 program this week. We appreciate you assembling a team who could answer our questions, and for the time that everyone took to participate.

This email is intended to be a reiteration of the briefing we had at the end of the audit to discuss EPA's observations. These observations are preliminary and do not constitute a determination of compliance.

East Bridgewater's MS4 program is commendable in several ways. First, it was apparent that there is good cooperation between town offices. Representatives from the Department of Public Works (DPW), the Health Department, and the Planning Board / Conservation Commission reported several examples in which they have communicated to solve problems. Second, the town seems to have made good use of outside resources. Rather than trying to run their entire MS4 program in-house, East Bridgewater has worked closely with consultants to obtain inspection and plan review services for the Planning Board and Conservation Commission, and to develop a computerized mapping program. Further, East Bridgewater discussed working with a consortium of southeastern Massachusetts towns to collaborate on environmental compliance. Third, the mapping program utilized by East Bridgewater appears to hold great promise for asset management and environmental stewardship. It is encouraging that the MS4 program was a catalyst for a forward-thinking system that can be useful to the Town in many ways.

The area in which inspectors observed the most significant lack of MS4 program implementation is in Illicit Discharge Detection and Elimination (IDDE). IDDE is one of the cornerstones of a good MS4 program and essential to addressing water quality impairments in Town waterways. Rather than simply reacting to illegal connections of sanitary wastes to the storm drain system, the Town should be proactively looking for contaminated outfalls. EPA has generally considered that an adequate program would inspect every outfall in the MS4 and perform investigations on outfalls that are suspected of contamination. Investigations should be continued until illicit connections are resolved, and follow-up testing should be done to confirm that all illicit connections were eliminated. An example IDDE protocol developed by EPA Region I is attached to this email. If you have any questions about the protocol, please let me know.

While the Town has removed several illicit connections in the North Central Street area, these discoveries were not the result of a systematic Town investigation, and are not part of a program likely to result in the elimination of all illegal discharges from the East Bridgewater MS4. Of particular concern is the Town's failure to adequately address the contaminated outfall on West Union Street identified by Mass DEP in 2008 and 2009. The outfall was still contaminated when EPA visited in 2012.

Other program areas in which East Bridgewater may be deficient include the following:

- Post construction storm water management in new development and redevelopment:
    - Procedures are not in place to ensure that structural Best Management Practices (BMPs) would be maintained once a new development is accepted by the Town;

    - The Town does not have records documenting the procedures used to ensure that developers properly designed and installed structural BMPs;
    - The Town does not appear to have a rule requiring post construction stormwater controls from all developments over one acre, even if these developments do not discharge to a jurisdictional wetland.
- Construction site storm water runoff control:
    - The Town does not have records documenting review of proposed erosion control measures, inspection of construction sites, and enforcement of erosion control rules (it appears that review and inspections may be done but many of these records are kept off site by a consultant);
    - The Town does not appear to have a rule requiring construction-period stormwater controls from all construction sites over one acre, even if these developments do not discharge to a jurisdictional wetland.
- Pollution prevention and good housekeeping in municipal operations:
    - Materials susceptible to erosion were stored and/or handled in uncovered areas, with no structural controls between storage/handling areas and receiving waters;
    - No facilities were available for truck washing and capture/treatment of wash waters.
- Public education and outreach:
    - The Town identified a few outreach efforts, but there should be an education component aimed generally at residents.

Feel free to share this email with other Town officials, and don't hesitate to contact me if you have any questions or additional information.

Thank you,
Jack

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION I
5 POST OFFICE SQUARE – SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

Certified Mail – Return Receipt Requested

April 30, 2013

Town of East Bridgewater, Massachusetts
Mr. John Haines, Department of Public Works Director
100 Willow Ave
East Bridgewater, MA 02333

Re: **Notice of Violation No. 2013–NOV-02**

The purpose of this Notice of Violation ("NOV") is to inform you that personnel from the United States Environmental Protection Agency ("EPA") have identified violations of the Clean Water Act ("CWA") within the Town of East Bridgewater, Massachusetts (the "Town").

The Town is subject to the Small Municipal Separate Storm Sewer System ("MS4") General Permit Number MAR041109 ("MS4 Permit"). Part I.B.2(a), (j), and (k) of the MS4 Permit prohibits the discharge of stormwater mixed with non-stormwater and discharges that would cause or contribute to the instream exceedence of water quality standards. Part II.B.3 of the MS4 Permit requires the permittee to develop and implement a plan to detect and eliminate illicit discharges into the storm sewer system. An illicit discharge is any discharge to an MS4 that is not composed entirely of stormwater and is not listed as an allowable non-stormwater discharge.

On July 11, 2012, EPA personnel observed a discharge from an approximately 24-inch corrugated metal pipe into the Meadow Brook under West Union Street, East Bridgewater. No precipitation had occurred at a weather station located in Bridgewater, Massachusetts since at least July 6, 2012[1]. The discharge is within the urbanized area of East Bridgewater[2]. The Meadow Brook is a Class B water[3]. Class B waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. The Meadow Brook (segment ID MA62-38) is listed by

[1] National Oceanic and Atmospheric Administration, 2013. National Climatic Data Center. Station ID: GHCND:USC00190840 - BRIDGEWATER, MA US

[2] EPA, 2013. Map of NPDES Phase II Automatically Designated MS4 Areas, East Bridgewater, Massachusetts. Available at: http://www.epa.gov/region1/npdes/stormwater/assets/pdfs/ma/EastBridgewater.pdf

[3] Massachusetts Department of Environmental Protection, 2007. 314 CMR 4.0 – Massachusetts Surface Water Quality Standards. Available at: http://www.mass.gov/dep/water/laws/tblfig.pdf

the Commonwealth of Massachusetts as impaired for the presence of fecal coliform[4]. The Meadow Brook flows into the Matfield River and from there into the Taunton River.

A water quality sample was collected from the discharge into Meadow Brook in accordance with an EPA-approved Quality Assurance Project Plan. The sample was analyzed for a number of different water quality parameters, some of which can be used to distinquish between stormwater and non-stormwater discharges. The resulting data (summarized in Attachment 1) display elevated levels of E. coli and enterococcus bacteria, indicating that the Town is discharging stormwater mixed with non-stormwater through its MS4 into the Meadow Brook.

The discharge from the storm drain located under West Union Street bridge was also analyzed for, and found to contain, selected pharmaceutical compounds. The presence of the specific pharmaceutical compounds in these samples provides additional evidence that the sources of the bacterial contamination are of human origin and due to the presence of sanitary sewage. The discharge on July 11, 2012 violates the prohibition on discharging stormwater mixed with non-stormwater and on discharges that cause or contribute to violations of the Massachusetts surface water quality standards for E. coli and enterococcus bacteria.

The Town's discharge violates Section 301 of the CWA, 33 U.S.C. § 1311. It is the responsibility of the Town to maintain compliance with its MS4 Permit and the CWA. **Within thirty (30) days of the date of receipt of this NOV**, pursuant to Section 308 of the CWA, 33 U.S.C § 1318, please submit to the contact person listed below a Statement describing the actions that will be taken to correct the violations and a schedule for their implementation.

This NOV may not specify all violations of the CWA or violations of other environmental requirements that may exist in the Town. This NOV does not preclude the EPA or any other agency from commencing any enforcement action regarding any such violations. It is your responsibility to comply with all legal requirements, whether or not the EPA notifies you of any violations or takes enforcement action against you. Nothing in this NOV relieves you of other obligations under applicable federal, state, and local law. Failure to comply with the CWA may result in your liability for administrative, civil, or criminal penalties under Section 309(c), (d), or (g) of the CWA, 33 U.S.C. § 1319(c), (d), or (g), as modified by 40 C.F.R. Part 19. No provision of this NOV and no action or inaction by EPA shall be construed to constitute an assurance by the EPA that actions you take to address the violation(s) specified herein will result in compliance.

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[4] Massachusetts Department of Environmental Protection, 2010. Massachusetts Year 2010 Integrated List of Waters. Available at: http://www.mass.gov/dep/water/resources/10list6.pdf

Please submit all information and refer any questions regarding this NOV to:

U.S. Environmental Protection Agency, Region 1
5 Post Office Square – Suite 100
Water Technical Unit
Mail Code OES04-1
Boston, MA 02109-3912
Attn: Jack Melcher
617-918-1663

Sincerely,

Susan Studlien

Susan Studlien, Director
Office of Environmental Stewardship
Environmental Protection Agency, Region 1

cc: David Burns, MassDEP (electronic mail only)
George Samia, East Bridgewater Town Administrator
Robert Philbrick, East Bridgewater Health Department Agent

Table 1: Summary of East Bridgewater, MA MS4 Inspection, July 11, 2012

Sample ID	BB
Time	11:30
Latitude/Longitude	42.031609N / 70.966535W
Description of Location	Outfall (approximately 24" corrugated metal pipe) under West Union Street bridge over Meadow Brook
Physical Observations	No odor observed, some suds present, yellowish color
Temperature, °C	19.14
Specific Conductivity, µS/cm	1,052
Salinity, ppt	0.52
Ammonia, mg/l	~0.4
Total Chlorine, mg/l	0.07
Detergent, mg/l	0.15
Atenolol, ng/l	77
Acetaminophen, ng/l	70
Cotinine, ng/l	82
1,7-Dimethylxanthine, ng/l	100
Caffeine, ng/l	200
Carbamazepine, ng/l	4.0
Metoprolol, ng/l	24
E.Coli, MPN/100ml	48,840
Enterococcus, MPN/100ml	130

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 29 July 2009

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Everett, MA

From: Todd Borci

To: File

On Tuesday, 28 July 2009, EPA inspector Todd Borci conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Everett, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4"). EPA collected water quality samples from two stormwater outfalls located along the northern bank of the Island End River near the corner of Beachum Street and Market Street in the City and one culverted stream near Boston Market Terminal by commuter rail tracks.

At approximately 9:05 hours EPA sampled the Boston Market Terminal culvert (sample id "IsEnd03A"). This culvert is an approximate 4'x 8' stone and wood box culvert. EPA noted a slight sewage and petroleum odor, thick bacteria and algae on rocks, and the water was grayish/yellowish. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated elevated levels of ammonia (3.0 mg/l) and surfactants (0.80 mg/l) in the sample. EPA personnel typically use 0.5 mg/l ammonia and 0.25 mg/l surfactants as threshold level screening concentrations, where sample results equal to or greater than these concentrations may be indicative of illicit discharges. Samples were collected and sent back to the EPA laboratory for enterococcus bacteria, PPCP, surfactants, ammonia, fluoride, and total phosphorus, and Alpha Analytical Laboratory for surfactants, ammonia, fluoride, free and total chlorine and potassium.

At approximately 9:25 hours EPA sampled an outfall located along the northern bank of the Island End River near the corner of Beacham Street and Market Street (sample id "IsEnd02") located approximately 2 yards west of "IsEnd03". This outfall is an approximate 8-foot corrugated metal pipe in a gravel headwall. EPA noted a strong petroleum odor, some suds on water surface, gray and cloudy water, and algae and oil covering surrounding rocks. Samples were collected and sent back to the EPA laboratory for enterococcus bacteria, PPCP, surfactants, ammonia, fluoride, and total phosphorus, and Alpha Analytical Laboratory for surfactants, ammonia, fluoride, free and total chlorine, potassium and TPH.

At approximately 9:26 hours EPA sampled an outfall located along the northern bank of the Island End River near the corner of Beachum Street and Market Street (sample id "IsEnd03") located approximately 2 yards east of "IsEnd02". This outfall is an approximate 12 foot, semi-

suds on water surface, gray and cloudy water, and algae and oil covering surrounding rocks. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated elevated levels of ammonia (1.0 mg/l) and surfactants (1.50 mg/l) in the sample. Samples were collected and sent back to the EPA laboratory for enterococcus bacteria, PPCP, surfactants, ammonia, fluoride, and total phosphorus, and Alpha Analytical Laboratory for surfactants, ammonia, fluoride, free and total chlorine, potassium and TPH. A large plume of soapy, cloudy water exited the pipe near the end of sampling, and a chemical smell was noted at that time.

Following the inspection, Julius Ofurie, City Engineer for the City arrived at the site. Mr. Ofurie was notified of EPA's observations and findings, and acknowledged that the City "…has some issues to take care of…" in this area.

Once received from EPA laboratory, the analytical data for this sampling effort will be attached to this report.

The inspection occurred during dry conditions, as according to the National Oceanic and Atmospheric Administration (Logan Airport gauge).

Inspection ended at approximately 10:45. EPA has been and will continue to be in contact with the City of Everett and its consultants as follow-up.

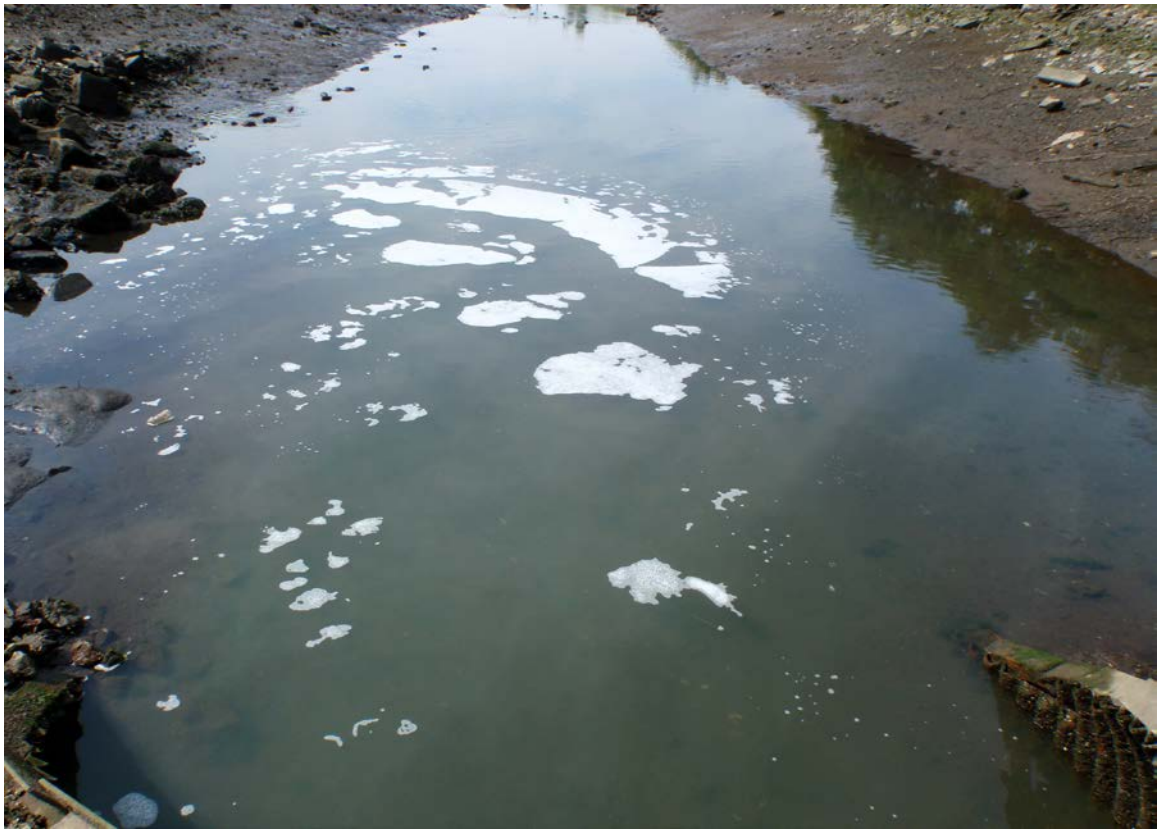


Photo 1: 7/28/09 9:59 AM View facing south – Island End River outfall. Note plume of suds on surface of water. Sample "IsEnd03" collected at this location.

5-4-06

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NPDES	yr/mo/day	Inspection Type	Inspector	Fac Type
1 W 2 5	3 MA R04 10 78 11	12 09 07 29 17	18 S	19 R	20 1

Remarks

21 Stormwater MS4 Sampling 66

Inspection Work Days	Facility Self-Monitoring Evaluation Rating	BI	QA	Reserved
67 01 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected *(For industrial users discharging to POTW, also include POTW name and NPDES permit number)*

City of Everett, Massachusetts

Entry Time/Date	Permit Effective Date
1230 7/29/09	5/2003
Exit Time/Date	**Permit Expiration Date**
1250 7/29/09	8/2008

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)

—

Other Facility Data *(e.g., SIC NAICS, and other descriptive information)*

Name, Address of Responsible Official/Title/Phone and Fax Number

Julius Ofurie
City Engineer
617-394-2251
484 Broadway Room 26 2nd floor
Everett, MA 02149

Contacted ☐ Yes ☒ No

Section C: Areas Evaluated During Inspection *(Check only those areas evaluated)*

☐ Permit	☐ Self-Monitoring Program	☐ Pretreatment	☐ MS4
☐ Records/Reports	☐ Compliance Schedules	☐ Pollution Prevention	
☐ Facility Site Review	☐ Laboratory	☒ Storm Water	
☐ Effluent/Receiving Waters	☐ Operations & Maintenance	☐ Combined Sewer Overflow	
☐ Flow Measurement	☐ Sludge Handling/Disposal	☐ Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments

(Attach additional sheets of narrative and checklists, including Single Event Violation codes, as necessary)

SEV Codes	SEV Description
☐☐☐☐☐	
☐☐☐☐☐	
☐☐☐☐☐	
☐☐☐☐☐	

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Todd Doni	US EPA R1 617-918-1358	8/6/09
Signature of Management Q A Reviewer	**Agency/Office/Phone and Fax Numbers**	**Date**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 12 July 2011

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Everett, MA

From: Todd Borci

To: File

On Wednesday, 22 June 2011, EPA inspector Todd Borci conducted a Compliance Sampling Inspection (CSI) of the City of Everett, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4"). EPA collected water quality samples from two stormwater outfalls located along the western portion of a tidal ditch that forms part of the headwaters of the Island End River.

At approximately 1113 hours EPA sampled the water discharging from a large culvert approximately 200 feet southwest of the southern terminus of Spring Street (location id "IsEnd03A"). EPA noted the culvert was discharging at approximately 50 gal/min and the flow was slightly cloudy with a blue/gray tint. The culvert discharges on the southern side of a train corridor. According to information provided by the City, this culvert discharges stormwater from a large portion of the southern and central areas of the City. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA processed a surface water sample collected at the location. Field kits indicated elevated levels of ammonia (1.0 mg/l) and surfactants (1.5 mg/l) in the sample. EPA notes the elevated surfactant level was likely due in part to the elevated salinity (14.08 parts per thousand) of the water discharging from the culvert. EPA personnel typically use 0.5 mg/l ammonia and 0.25 mg/l surfactants as threshold level screening concentrations, where sample results equal to or greater than these concentrations may be indicative of illicit discharges. A sample was collected and sent back to the EPA laboratory to be analyzed for e. coli and enterococcus bacteria, and selected pharmaceutical compounds.

At approximately 1115 hours EPA sampled a second outfall ("IsEnd03Z") approximately 50 feet south of the "IsEnd03A" culvert opening. The outfall was an approximately 8-inch pipe of unknown construction with significant orange-staining and bacterial growth at the pipe opening and on the surface of the rocks below the outfall. A steady, murky brown/orange flow of approximately 1 gal/min with a slight oily sheen on the surface was observed discharging from the outfall. EPA noted the outfall appeared tidally influenced, but only so near the upper reach of high tide. Sampling was conducted on an incoming tide, as low tide had occurred at approximately 1049 hours. Using Hach brand test strips for ammonia and a Chemetrics K-9400

field kit for surfactants, EPA processed a surface water sample collected at the location. Field kits indicated no detectable levels of ammonia and elevated levels of surfactants (2.0 mg/l) in the sample, although EPA notes this reading is likely due at least in part to the salinity of the brackish water during sampling, which was measured at 13.23 parts per thousand. A sample was collected and sent back to the EPA laboratory for analyses for e. coli and enterococcus bacteria, and selected pharmaceutical compounds.

Once received from EPA laboratory, the analytical data for this sampling effort will be attached to this report.

Inspection ended at 1130 hours. EPA will contact the City for follow-up as appropriate.

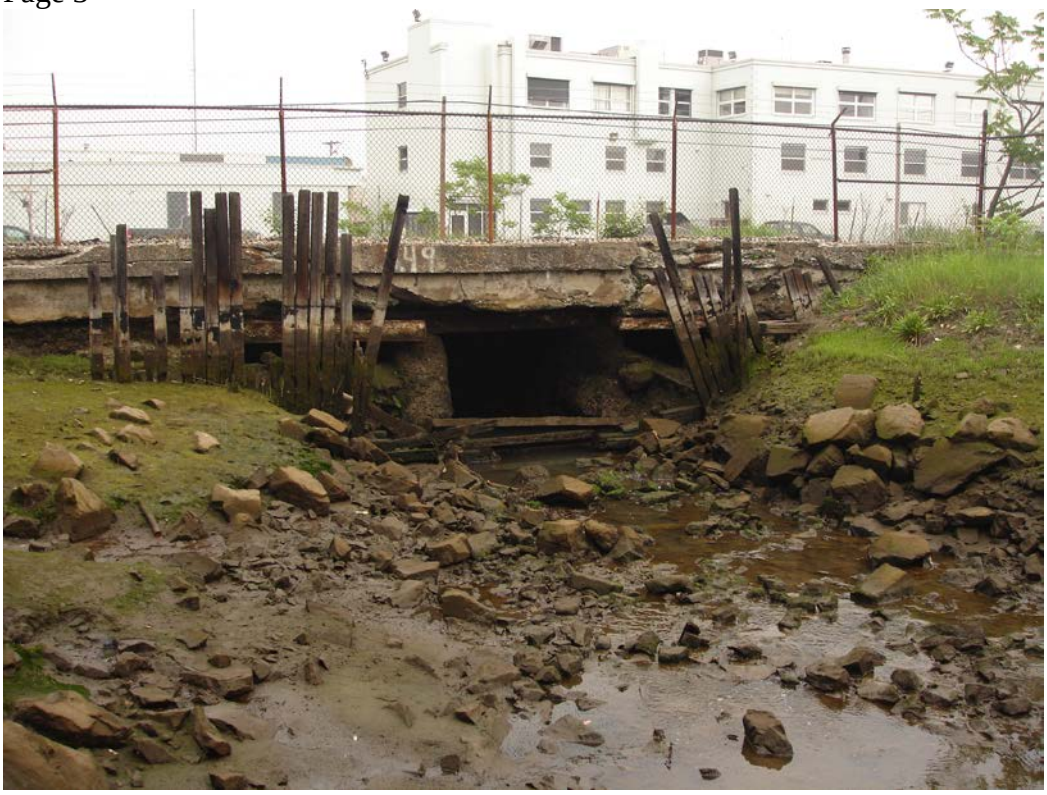


Photo 1: 6/22/11 1113 View of "IsEnd03A" sample location.

Photo 2: 6/22/11 0950 View of "IsEnd03Z" sample location approximately 50 feet south of "IsEnd03A". Discharge was murky orange with fine suspended material.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

DATE: September 21, 2012

SUBJ: Compliance Evaluation Inspection
Everett, Massachusetts

FROM: Erin Trainor, Inspector

TO: File

REQUESTED BY: Todd Borci (OES)

I. Background Information

A. Date, Time of inspection: Tuesday, September 11, 2012, 11:00 AM

B. Weather Conditions: Sunny, approximately 65 degrees F

C. USEPA Representatives: Erin Trainor
Todd Borci

D. Site Representative: Julius Ofurie, City Engineer
City of Malden
484 Broadway, Everett, MA 02149
Phone: (617) 394-2250

Note: The Site Representative was not contacted for this inspection.

E. Address: Intersection of Miller Street and Estes Street, Everett, Massachusetts

II. Purpose of Inspection

The purpose of the inspection was to identify illicit connections or illegal discharges within the City of Malden Municipal Separate Stormwater Sewer System (MS4). While conducting compliance sampling activities on Hadley Street in Malden, MA, EPA inspectors observed an accumulation of silt and turbid flow within an access manhole. The purpose of the inspection within the City of Everett was to determine the source of the silt accumulation and turbid discharge, as well as compliance with the General Permit for Dewatering Activity Discharges.

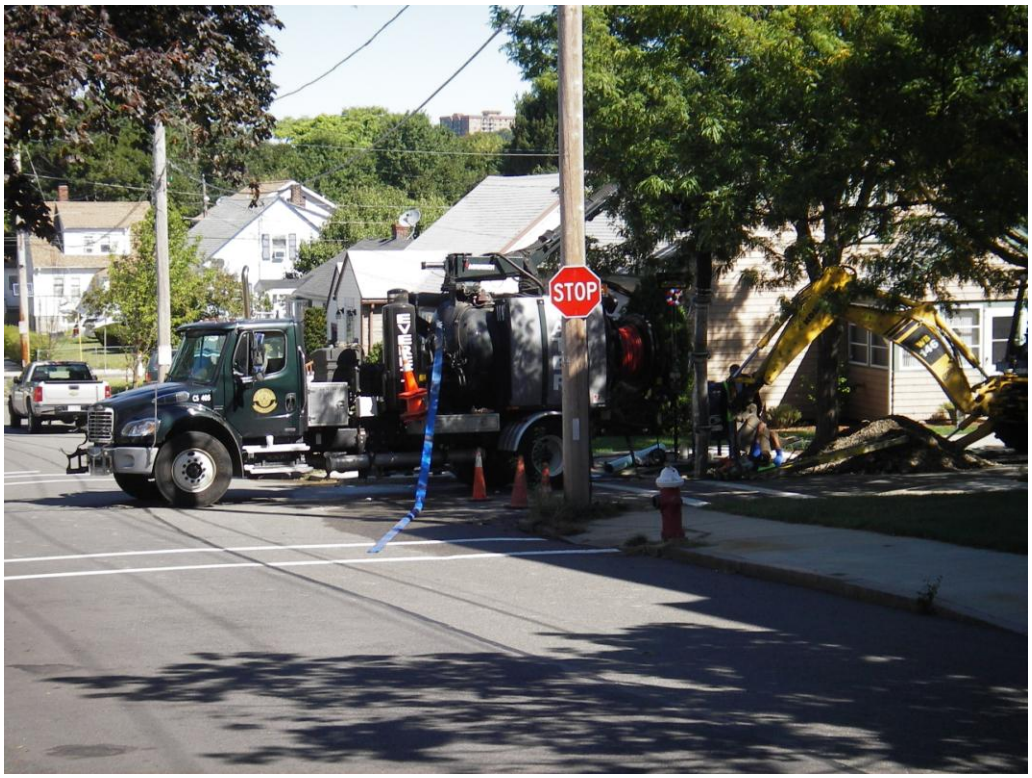
III. Inspection Observations and Findings

On Tuesday, September 11, 2012, EPA inspectors Todd Borci and Erin Trainor conducted an announced Compliance Sampling Inspection (CSI) of the City of Malden MS4 at sixteen (16) locations. At the time of the inspection, the weather was sunny and approximately 65 degrees Fahrenheit. No precipitation was recorded in the area within 48 hours of the inspection.

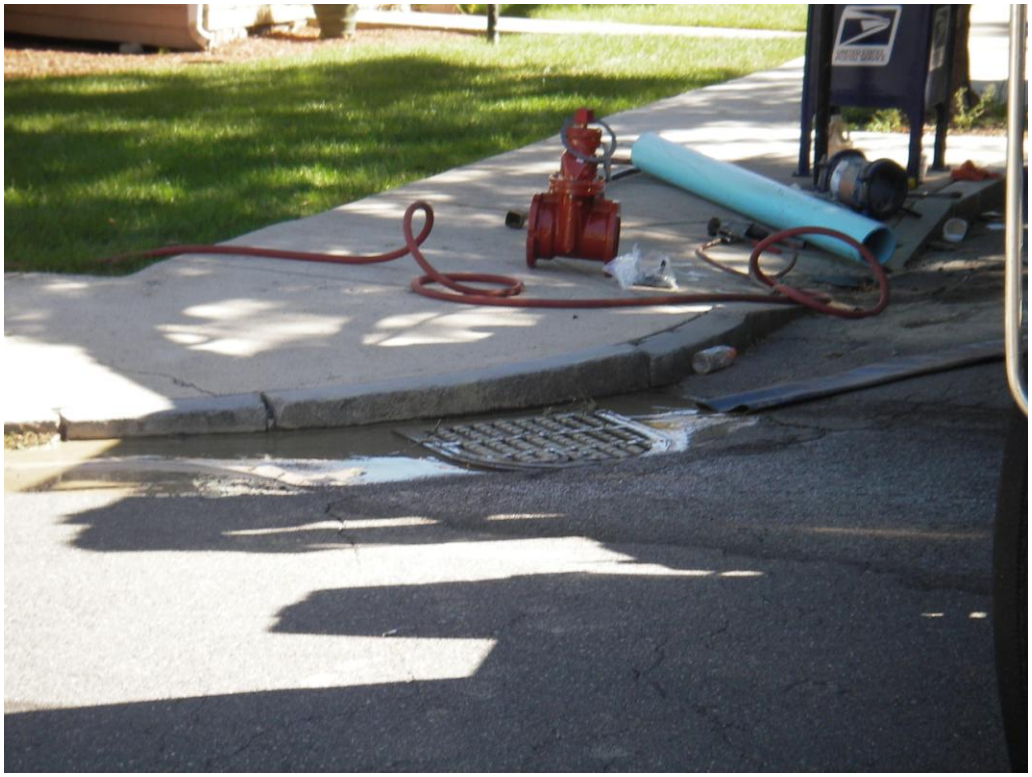
At approximately 11:00, EPA inspectors observed an accumulation of silt and turbid flow within an access manhole located on Hadley Street in Malden, Massachusetts. A dewatering truck owned by the City of Everett was observed upstream of the manhole, pumping groundwater from a trench and conveying it to a catch basin located at the intersection of Miller Street and Estes Street in Everett, Massachusetts. The catch basin appeared to drain into the City of Malden MS4 and ultimately discharged into Town Line Brook at an outfall designated as TL-9. EPA inspectors observed a turbid plume entering Town Line Brook from TL-9.

The City of Everett is covered under the 2003 General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). A copy the City of Everett Notice of Intent (NOI) has been posted online, and is dated July 31, 2003. The City of Everett EPA NPDES permit number is MAR041078. The City of Everett has not filed a NOI under the General Permit for Dewatering Activity Discharges.

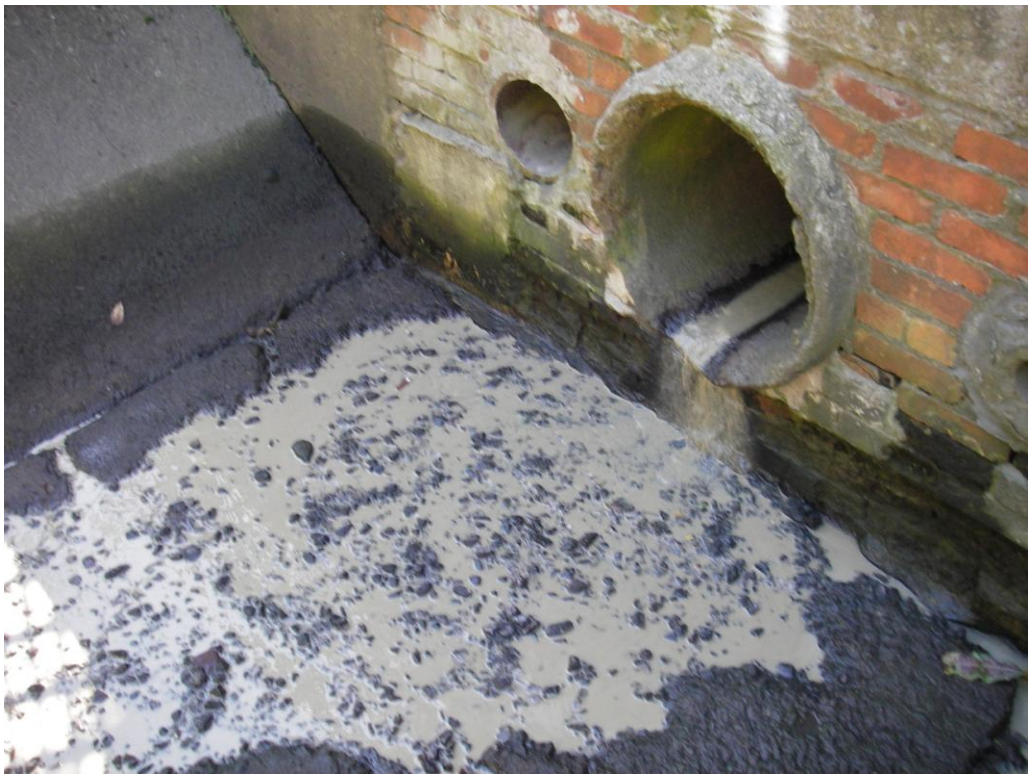
End of Report



View of city-owned dewatering tuck.



View of pumped groundwater conveyed to MS4.



View of turbid discharge from outfall TL-9 located at the east end of Hadley Street in Malden, Massachusetts.

View of turbid plume entering Town Line Brook.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

DATE: October 24, 2013

SUBJ: City of Everett, MA MS4 Inspection
Everett, Massachusetts

FROM: Todd Borci, Enforcement Officer

TO: File

REQUESTED BY: Todd Borci (OES)

I. Background Information

A. Date, Time of inspection: Wednesday, September 25, 2013, 0800 Hrs

B. Weather Conditions: Sunny, approximately 60 degrees F

C. USEPA Representatives: Todd Borci

D. Site Representative: Jay Marcotte, City Services Director
City of Everett
19 Norman Street, Everett, MA 02149
Phone: (617) 394-5044

E. Address: Kelvin Street Outfall
a.k.a. Outfall #9
GPS 42.402156 N, -71.066951 W

II. Purpose of Inspection

The purpose of the inspection was to examine access to, and conditions at an outfall draining parts of the Municipal Separate Stormwater Sewer System (MS4) for the City of Everett, MA (the "City"). EPA has previously examined other City outfalls but had not yet examined an outfall reported to exist approximately 300 feet south of the southern terminus of Kelvin Street in the southwest section of the City. The City is currently required to address illicit discharges from its MS4 system under an EPA Administrative Order (EPA AO 09-026).

III. Inspection Observations and Findings

On Wednesday, September 25, 2013, EPA inspector Todd Borci conducted an unannounced Compliance Inspection (CI) of the City's Kelvin Street MS4 outfall, located approximately 300

feet south of the southern terminus of Kelvin Street. According to available mapping, the outfall discharges to an open channel that runs a short distance to the south, passes beneath Route 16, and then the open channel runs to the west for approximately 1,500 feet, where it then discharges into the Malden River. EPA was aware of recent high bacteria counts downstream of the outfall, near the Gateway Center shopping mall, prior to the confluence of the unnamed stream and the Malden River (which is tributary to the Mystic River and Boston Harbor) based on samples collected by the Mystic River Watershed Association (MyRWA). Neither EPA nor MyRWA had previously observed the Kelvin Street outfall, and prior to this inspection it was unknown whether the outfall was readily accessible, whether the outfall could be sampled, and flow conditions at the outfall.

At 0800 hours the EPA Inspector observed the general vicinity of the outfall to be completely overgrown with no discernible outfall location. After approximately 45 minutes of searching and by using available mapping and aerial photography, the Inspector was able to locate the outfall. Initial observations noted the outfall was half submerged and discharging, and the discharge was an opaque white with some large soap bubbles (Photos 1 -3). A musty, laundry odor was noted.

At 0900 the Inspector traveled to the location of a public meeting of the Mystic River Steering Committee that they were attending. Prior to the meeting, at approximately 0915, the Inspector called the City of Everett Engineering Department. EPA's point of contact under the Everett AO has been the City Engineer, Mr. Julius Ofurie. Mr Ofurie was not available and the Inspector spoke with his secretary. EPA requested the City investigate the source of the discharge, end the discharge as soon as possible, and report back to the EPA Inspector the source of the discharge and the steps taken to end the discharge, and the secretary agreed to pass the request on to Mr. Ofurie as soon as he was in.

By 1200 hours, the public meeting had ended and EPA had not been contacted by the City. The EPA Inspector then notified a member of the Everett City Planning Department that attended the same public meeting, Ms. Marzie Galazka, of the observations and the lack of return call from the City Engineering Department. Ms. Galazka suggested EPA speak with the City's new Director of City Services. The EPA Inspector first returned to the outfall location, where the discharge appeared the same as it had earlier in the day (Photo 4). The Inspector then traveled to the City Services Director's office in Everett and met with the new Director, Mr. Jay Marcotte. The EPA Inspector identified himself, discussed the outfall observations, and showed the photographs of the outfall in question (Photos 1 – 4) with Mr. Marcotte. EPA again requested the City investigate the source of the discharge, end the discharge as soon as possible, and report back to the EPA Inspector the source of the discharge and the steps taken to end the discharge.

EPA departed the City Services Director's office and then departed the City of Everett at approximately 1300 hours.

As of the date of this report, EPA has not been contacted by the City with any of the requested information. EPA will now follow up with the City and take any appropriate follow on actions.

End of Report
Attachments: Photographs

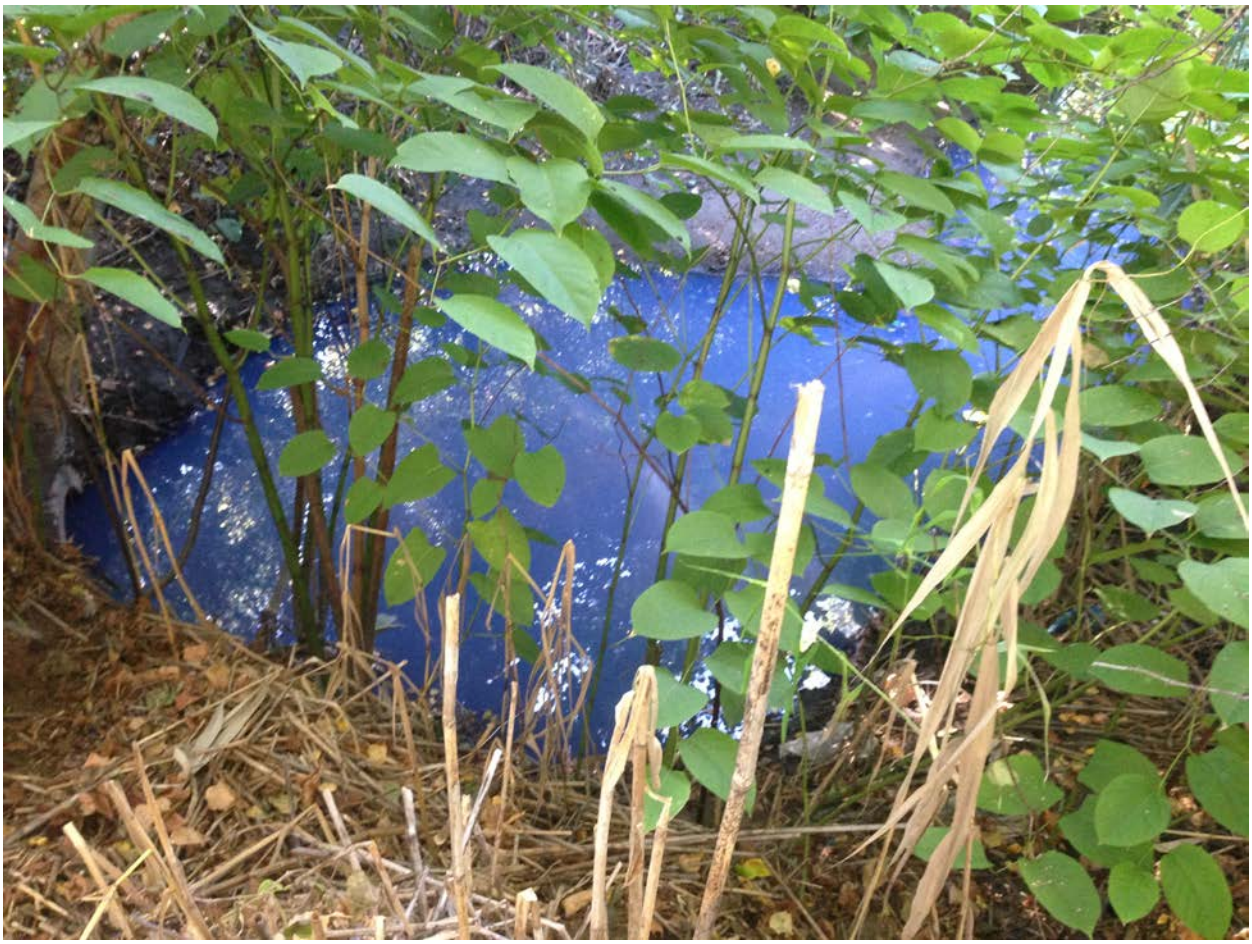


Photo 1: View facing west of Kelvin Street outfall (at far left center) and opaque discharge emanating from outfall.

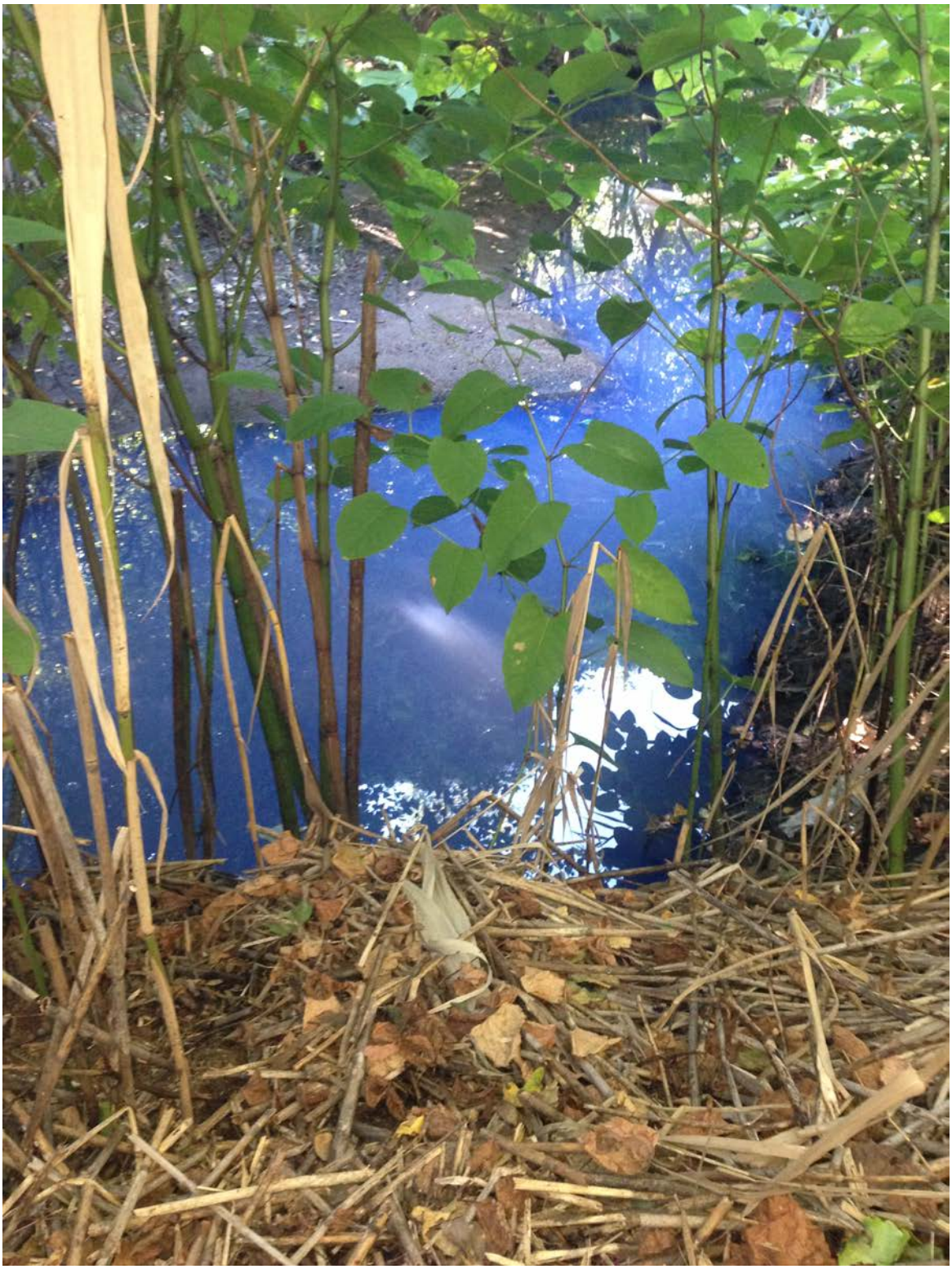


Photo 2: View facing southwest of open channel immediately downstream of Kelvin Street outfall. Outfall seen in Photo 1 is to the left. Milky, opaque appearance is throughout stream.

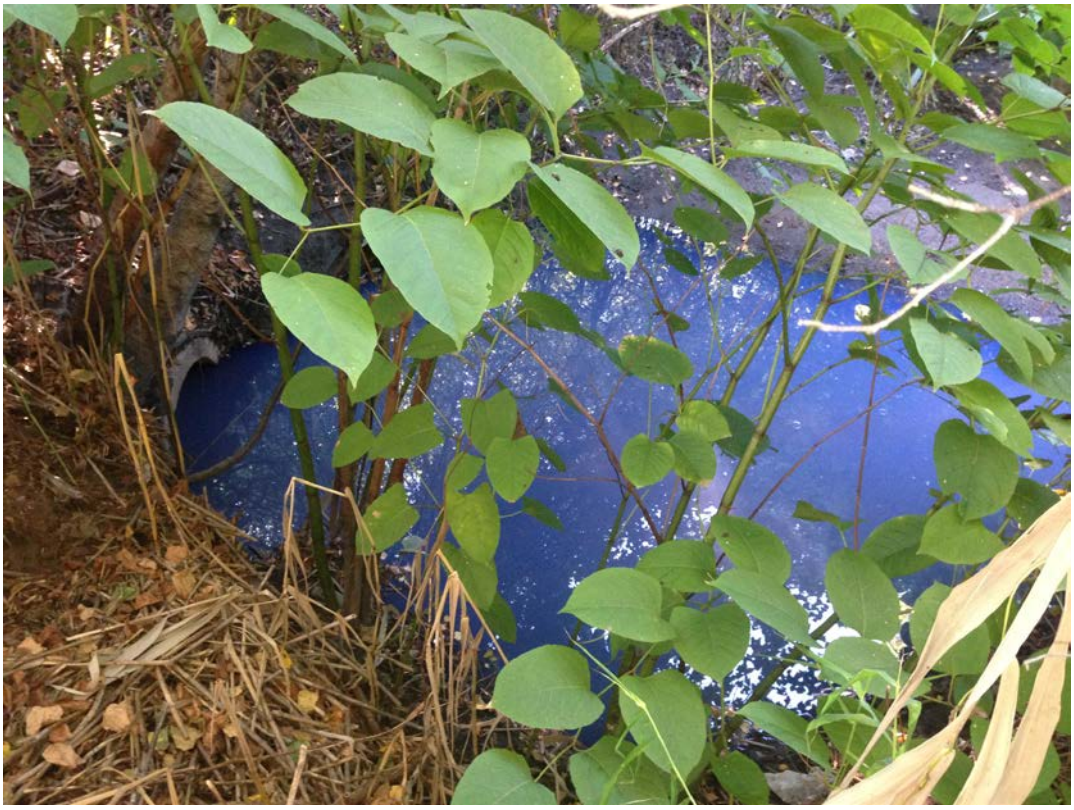


Photo 3: Similar view as in Photo 1; taken to document several large soap bubbles on discharge surface – note bubbles in right center of photo.

Photo 4: View of Kelvin Street outfall facing west at 12:06 pm. No change in discharge from earlier in the day.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region I - EPA New England

Author: Andrew Spejewski

Drafted Date: July 5, 2011

I. Facility Information

A. Facility Name: Hanscom Air Force Base
B. Facility Location:
C. Facility Contact: Donald Morris, Environmental Director
66 AB/CEV
120 Grenier St
Hanscom AFB, MA 01731

E. Permit #: MAR042029

II. Background Information

A. Date of inspection: June 28, 2011
B. Weather Conditions: Clear, dry.
C. US EPA Representative(s): Andrew Spejewski (for the MS4 audit; other EPA personnel were present as part of the multi-media inspection)
D. State/Local Representative(s): None.
E. Previous Enforcement Actions: None known from EPA.

III Purpose of Inspection

The inspection audited the base's MS4 program, under the EPA general permit for Massachusetts and New Hampshire. It was part of a multi-media EPA inspection that also examined compliance with federal lead paint regulations.

IV inspection

Entrance

By previous arrangement, Mr. Spejewski and the rest of the EPA team were met at the base entrance by Mr. Morris. The group proceeded to the environmental group office. After the conference, Mr. Spejewski met with Mr. Morris and Robert Spelfogel, a base environmental engineer. For the remainder of the inspection, unless otherwise noted, Mr. Spejewski met with Mr. Morris and Mr. Spelfogel; statements by these two collectively are credited to 'Environmental personnel'

Background

Environmental personnel stated the base is 846 acres overall, with about 10,000 workers on the base. Most of the base is office buildings, including the Lincoln Labs complex managed by MIT. The base no longer operates aircraft, and all flight operations, including maintenance of runways and infrastructure are now operated by Massport as a civilian airfield (with the exception of the base fire department which does provide service to the airport). A section of the base to the southeast is dedicated to housing, and all activities in that area, including road maintenance and

utilities are contracted to a private company.

The base owns and operates all roads and storm drainage structures outside of the housing area, including plowing and sweeping.

Sanitary sewage is piped to the Town of Lexington.

One facility on the base, the Aero Club, has a NPDES Multi-Sector General Permit for stormwater [An inspection of the facility done as part of the audit is attached].

Environmental Personnel stated that they believe the Lincoln Labs facility has a pre-treatment permit from the MWRA for discharges to the sanitary sewer; but the Air Force is not involved.

The base has a Spill Prevention, Control and Countermeasure plan, which was produced.

TMDLs:
According to Mr. Morris, the Shawsheen river is impaired, primarily for flow, but no TMDL has been completed. A contractor has been hired to prepare a joint SWMP for both the Air Force and Massport for the combined Air Force Base and airport, but the study has not yet been completed. In the meantime, the base has carried out many activities to improve flow (detailed below in post-construction)

Education & Public Involvement
Environmental Personnel pointed out several posters for different year's Earth Day stream cleanup events.
Environmental Personnel stated that the environment team occasionally sent e-mails to the base about environmental topics, including MS4 topics. No examples were provided during the inspection.
Environmental Personnel also stated that the base hazardous waste team educates base workers about proper handling of chemicals, proper disposal of oil and so forth.
At a later time, personnel mentioned that the base had a successful pet waste management plan; Mr. Spejewski did not ask for details.
Environmental Personnel stated that the base team does not educate residents, but they have given input to the housing contractor about educating residents on wetlands and stormwater info. At the end of the inspection a copy was provided of "Resident Guidelines" that are given to all base residents [attachment in file]. The 12-page Guidelines, which mostly cover building maintenance and allowed activities, include a statement forbidding use of pesticide or fertilizer within 100 feet of wetlands and grass cutting within 25 feet, and a statement forbidding illegal storing or disposing of hazardous waste (including motor oil).

Illicit Discharge Detection and Elimination
A map of the base storm sewer system was shown to Mr. Spejewski. Outfalls, catchbasins and connecting pipes were marked on the map.

Environmental Personnel stated they have no formal records of outfall inspections, but that contractors are regularly cleaning and viewing outfalls. Work records of the contractors were

provided, showing time spent on various tasks in the past several years [attachments in file]
"Repair Storm Drains" averaged about 110 hours per year for FY2009-11.
Sampling reports for outfall testing were presented, dated Oct 2009 and Sept 2010. Each report covered a portion of the outfalls on the bases. Bacteria were present in nearly all samples, but at low levels.
Environmental Personnel stated that bacteria levels were higher in the past, and they think the pet waste management plan, along with sanitary sewer repairs and renovations in the 1990s, are probably responsible for the decline.

Construction Oversight
Environmental Personnel stated there is currently one large construction project on the base, a Headquarters building for the Massachusetts National Guard Joint Forces. The project is being built by a contractor for the Mass. National Guard. Environmental Personnel stated that they confirmed that the project had a NPDES construction stormwater general permit, and observed and met with the contractor several times at the beginning of the project, but have not inspected since then based on the general impression that the contractors were competent and that base resources were needed elsewhere.

Environmental Personnel stated they do oversee smaller projects by contractors to the base itself, though in nearly all cases informal actions are enough when there are issues.

As part of the audit, Mr. Spejewski inspected the Joint Forces HQ construction site. A copy of the inspection report is an attachment.

Post-Construction
Mr. Morris discussed the base's extensive efforts to increase infiltration and reduce flow to the Shawsheen River (spurred by the impairment).
Mr. Morris stated the environmental group has an informal goal of 'double digit' (i.e. 10% or better) improvement in infiltration after construction projects for the base, though this was not possible in all cases.
According to Mr. Morris, the environmental group is able to comment on all significant design plans for the base; however Mr. Morris admitted that in at least one parking lot repaving project, he was too late to make the improvements he wanted. When Mr. Spejewski asked if that meant environmental sign-off was not required, Mr. Morris stated that either he missed the issue when he approved it early in the process, or had hoped to be able to make changes later in the process after approving it.
Mr. Morris mentioned several examples of projects where better infiltration was accomplished, including several parking lots where curbs were removed, allowing sheet flow into adjacent fields, and a program of raising catchbasins located in unpaved areas, allowing the areas to act as temporary infiltration zones or long-term wetlands while still letting excess flow to enter storm drains before it flooded roads or parking lots.
Later, during a short tour of the base, Mr. Morris pointed out several locations where this had been undertaken.
Mr. Morris stated that the new Mass. National Guard Joint Forces HQ was required to not increase runoff from the (previously undeveloped and wooded) site. Mr. Spejewski noted that during the inspection of that site a pipe potentially discharging stormwater off-site was observed,

and Mr. Morris appeared to be disturbed by the possibility of the site not meeting this requirement.

There are few industrial operations on the base. There is one site subject to the NPDES Multi-Sector General Permit for stormwater, the base Aero Club.
Mr. Spejewski inspected the facility as part of the audit; the inspection report is an attachment.

Maintenance/Housekeeping
Environmental Personnel stated that the base does its own sweeping and salting. De-icing is a salt/sand mix, using base-owned trucks. Environmental Personnel were unsure of the exact mix.

According to Environmental Personnel street sweeping is done after every storm. According to contractor work statements provided [attached], contractors spent about 750 hours sweeping each of FY2011 and 2010, and 2,192 hours in FY 2009. The base owns a two-year old vacuum sweeper. Sweepings are mixed with compost (the base composts on site) or dried and re-used for road sand.

Environmental Personnel stated that catchbasins are cleaned once per year by an outside contractor. Environmental Personnel were unsure whether the exact contract language requires inspection for structural problems of illicit discharges, but the base has gotten feedback on structural issues.

Most maintenance personnel are contract employee. Environmental Personnel stated that because of high turnover among the contract employees the base environmental group has relied on training the superintendent on stormwater issues, and letting education trickle down. Environmental Personnel was unable to produce documentation of the training.

Environmental Personnel stated that there is a base pesticide application plan. The current licensed applier just left the position.

The three toured some facilities on the base (on the way to and from the Joint Forces HQ construction site inspection).

A recycling area included several roll-off containers under an open roof, but other containers were exposed. A worker was sorting trash dumped on an exposed paved area. The recycling area drained to a long drain; Mr. Morris stated it was routed to the sanitary sewer.

The salt shed was covered and in good shape, though the loading ramp was outside and exposed. The maintenance garage was neat and clean; the maintenance superintendent stated that repairs were done at the motor pool, in a different location.

The motor pool garage/repair area was neat and clean. Oil drums were on containment pallets, and spill kits were present in several locations. A vehicle washing station was inside thebuilding, draining to floor drains. Environmental Personnel stated the drains connected to the sanitary

sewer.

Picture List for Tour

Note: IMG_ 0107.JPG, IMG_0113.JPG and IMG_0116.JPG files were corrupt and not able to be read by all programs. The files were opened in IE Explorer and saved as BMP files (IMG_0107.BMP , IMG_0113.BMP and IMG_0116.BMP), which appear to be readable by most programs. File IMG_0114.JPG is too corrupt to be read by IE Explorer or other programs tried to date.

IMG_0107	Base recycling area, far end
IMG_0108	Recycling area
IMG_0109	Salt storage shed; loading ramp extends to left of picture
IMG_0110	Oil storage in motor pool building
IMG_0111	Vehicle wash area in motor pool building
IMG_0112	Spill kit in motor pool building
IMG_0113	Oil storage in motor pool building
IMG_0114	[File corrupted]
IMG_0115	Wetland next to motor pool parking lot, created by raising catchbasin
IMG_0116	Parking lot with partial curb removal

Housing Area

P stated that while the private contractor owned all utilities, including storm drains, on the housing area, the Air Force did inspect the contractor for compliance with environmental laws. Mr. Spejewski requested a copy of a recent inspection checklist. Mr. Morris stated concern with doing so, because of a Air Force policy of not releasing internal audits. Mr. Spejewski gave his reasons for believing the checklists did not fall in that category, but the issue was not resolved during the audit.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 24 June 2009

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Haverhill, MA

From: Todd Borci

To: File

On Wednesday, 10 June 2009, EPA inspector Todd Borci conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Haverhill, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4"). EPA personnel collected surface water samples from Little River at two locations: where the stream discharges to the Merrimack River (Sample ID: "LR1"); and from the stream just prior to entering a culvert upstream of the commuter rail tracks and Washington Street in the last daylighted portion of the stream prior to discharge at the Merrimack River (Sample ID: "LR2"). EPA personnel also collected a sample from an outfall discharging from the concrete retaining wall on the north side of the Merrimack River approximately 100 feet upstream of the Little River discharge (Sample ID: "Wash1"). Additional EPA personnel assisting in the inspection were Leah Bowe and Christina Murphy. EPA collected surface water samples laboratory analysis of bacteria and field analyses of ammonia, surfactants, and free and total chlorine.

EPA personnel first sampled at the "Wash1" location. EPA noted approximately 5 gallons per minute of flow coming from an outfall with a tide gate. The outfall was approximately 10 feet above the stream bed and a small amount of suds were noted in the sediment beneath the discharge (see photo). Using Hach brand test strips for ammonia, a Hach field kit for ammonia (color wheel/Nessler Reagent), and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed surface water samples collected at the location. Ammonia test strips indicated an elevated level of ammonia (3.0 mg/l); the ammonia field kit indicated an elevated level of ammonia (1.7 mg/l); and surfactant field kits indicated elevated readings as well (0.75 mg/l).

EPA personnel sampled the outlet of the Little River into the Merrimack River. Sampling was conducted at low tide while wearing waders, and EPA personnel observed a large, cloudy plume delineating the Little River flow from the Merrimack flow. EPA personnel used a 15-foot reach to obtain a sample from the middle of the Little River flow. Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 438.2 uS/17.2 °C/0.2 ppt, respectively at the "LR1" sample location. Using Hach brand test strips for ammonia, a Hach field kit for ammonia (color wheel/Nessler Reagent), and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed surface water samples collected at the location. Ammonia test strips indicated no detectable ammonia (0.0 mg/l); the ammonia field kit indicated an elevated level of ammonia

(0.5 mg/l); and surfactant field kits indicated low levels of surfactants (0.2 mg/l).

EPA personnel next sampled the Little River upstream of the "LR1" location, just prior to where the Little River enters a culvert beneath the downtown portion of the City. Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 431.7 uS/17.3 °C/0.2 ppt, respectively at the "LR2" sample location. Using Hach brand test strips for ammonia, a Hach field kit for ammonia (color wheel/Nessler Reagent), and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed surface water samples collected at the location. Ammonia test strips indicated no detectable ammonia (0.0 mg/l); the ammonia field kit indicated an elevated level of ammonia (0.5 mg/l); and surfactant field kits indicated no detectable levels of surfactants (0.0 mg/l).

Once received, the analytical data for this sampling effort will be attached to this report.

Weather on the day of inspection was cloudy and damp. According to the National Oceanic and Atmospheric Administration, the last measurable precipitation was 0.1 inches on 9 June 2009 (Lawrence Airport gauge).

Inspection ended at 1200. EPA Inspector will review data once received for enforcement follow-up.

End of Report.

Photos Attached.

Haverhill, MA 6/10/09 EPA MS4 Inspection
Photographs

Photo 1: 6/10/09 at 10:30 AM. View facing “Wash1” sample location along northern retaining wall along Merrimack River.

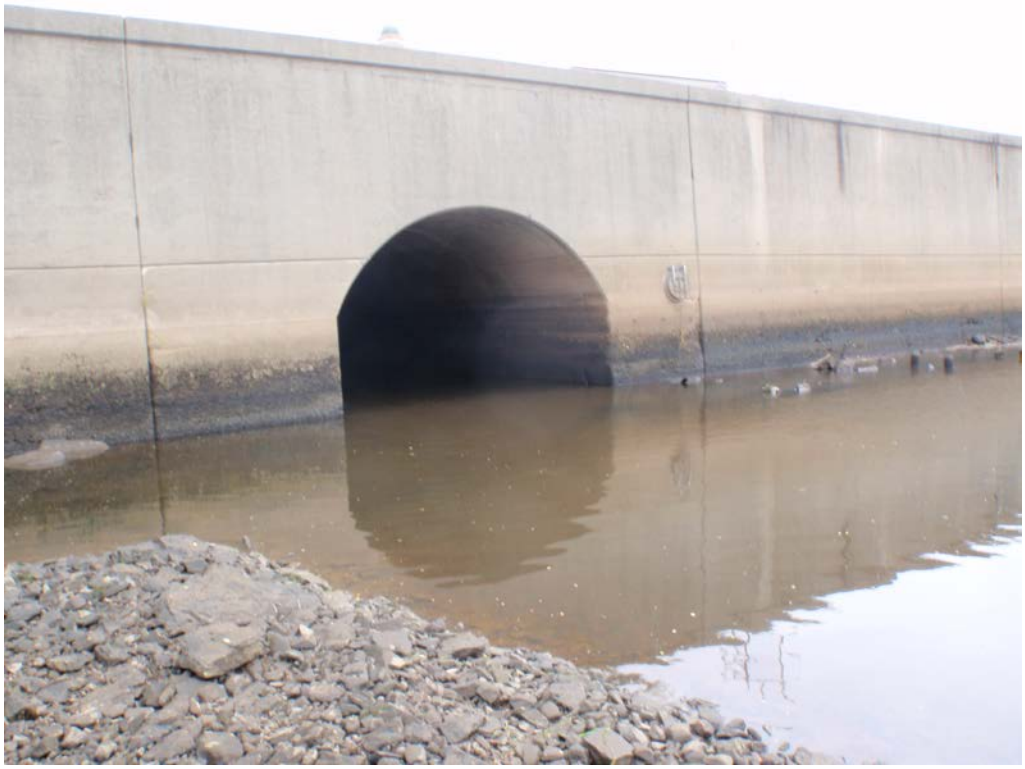


Photo 2: 6/10/09 10:50 AM. View facing Little River outlet along northern bank of Merrimack River at low tide.

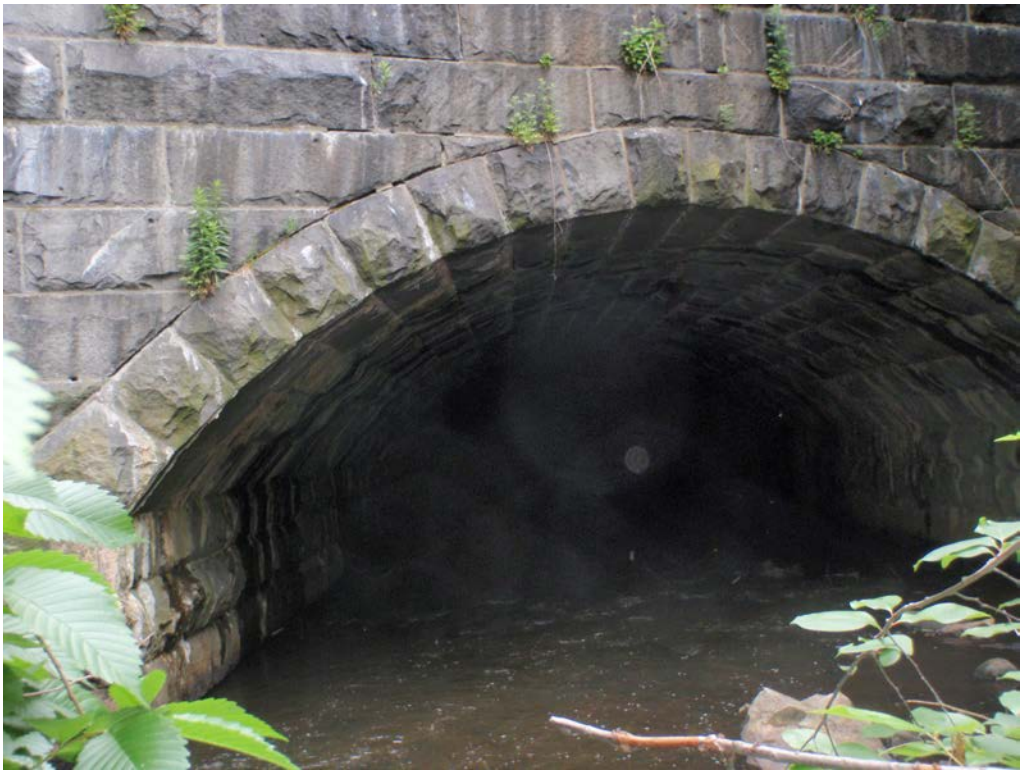


Photo 3: 6/10/09 11:30 AM. View facing Little River inlet just north of commuter rail tracks and Washington Street. Sample “LR2” collected approximately 100 feet north of culvert inlet.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Haverhill, MA MS4

Enterococcus in Water

Matrix: Water

DRAFT DATA

Sample Number	Lab ID	Date of Collection		Date of Analysis		Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
BETH 01	AB39152	05/13/13	8:50 am	05/13/13	1:45 pm	Enterococcus in Water	**201**	10	
BWOOD1	AB39150	05/13/13	8:25 am	05/13/13	1:45 pm	Enterococcus in Water	**10**	10	
CASH 01	AB39153	05/13/13	9:30 am	05/13/13	1:45 pm	Enterococcus in Water	**10**	10	
CASH 02	AB39154	05/13/13	9:35 am	05/13/13	1:45 pm	Enterococcus in Water	**52**	10	
MR01	AB39151	05/13/13	8:30 am	05/13/13	1:45 pm	Enterococcus in Water	**52**	10	

Number of Samples: 5

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Haverhill, MA MS4

E. Coli Defined Substrate

Matrix: Water

DRAFT DATA

Sample Number	Lab ID	Date of Collection		Date of Analysis		Compound	Concentration MPN/100 mL	RL MPN/100 mL	Qualifier
BETH 01	AB39152	05/13/13	8:50 am	05/13/13	1:45 pm	E. Coli Defined Substrate	**354**	4	
BWOOD1	AB39150	05/13/13	8:25 am	05/13/13	1:45 pm	E. Coli Defined Substrate	ND	4	
CASH 01	AB39153	05/13/13	9:30 am	05/13/13	1:45 pm	E. Coli Defined Substrate	**16**	4	
CASH 02	AB39154	05/13/13	9:35 am	05/13/13	1:45 pm	E. Coli Defined Substrate	**124**	4	
MR01	AB39151	05/13/13	8:30 am	05/13/13	1:45 pm	E. Coli Defined Substrate	**568**	4	

Number of Samples: 5

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Lawrence, MA MS4

Enterococcus in Water

Matrix: Water

DRAFT DATA

Sample Number	Lab ID	Date of Collection	Date of Analysis	Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
SUTTON	0AB39155	05/13/13 11:00 am	05/13/13 1:45 pm	Enterococcus in Water	**10**	10	
SUTTON	0AB39156	05/13/13 11:20 am	05/13/13 1:45 pm	Enterococcus in Water	**10**	10	
SUTTON	0AB39158	05/13/13 11:50 am	05/13/13 1:45 pm	Enterococcus in Water	**10**	10	
SUTTON	0AB39159	05/13/13 12:20 pm	05/13/13 1:45 pm	Enterococcus in Water	ND	10	
SUTTON	0AB39160	05/13/13 12:00 am	05/13/13 1:45 pm	Enterococcus in Water	**10**	10	
SUTTON	0AB39157	05/13/13 11:30 am	05/13/13 1:45 pm	Enterococcus in Water	ND	10	

Number of Samples: 6

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Lawrence, MA MS4

E. Coli Defined Substrate

Matrix: Water

DRAFT DATA

Sample Number	Lab ID	Date of Collection	Date of Analysis	Compound	Concentration MPN/100 mL	RL MPN/100 mL	Qualifier
SUTTON	0AB39155	05/13/13 11:00 am	05/13/13 1:45 pm	E. Coli Defined Substrate	**12**	4	
SUTTON	0AB39156	05/13/13 11:20 am	05/13/13 1:45 pm	E. Coli Defined Substrate	**39**	4	
SUTTON	0AB39158	05/13/13 11:50 am	05/13/13 1:45 pm	E. Coli Defined Substrate	**25**	4	
SUTTON	0AB39159	05/13/13 12:20 pm	05/13/13 1:45 pm	E. Coli Defined Substrate	**30**	4	
SUTTON	0AB39160	05/13/13 12:00 am	05/13/13 1:45 pm	E. Coli Defined Substrate	**30**	4	
SUTTON	0AB39157	05/13/13 11:30 am	05/13/13 1:45 pm	E. Coli Defined Substrate	ND	4	

Number of Samples: 6

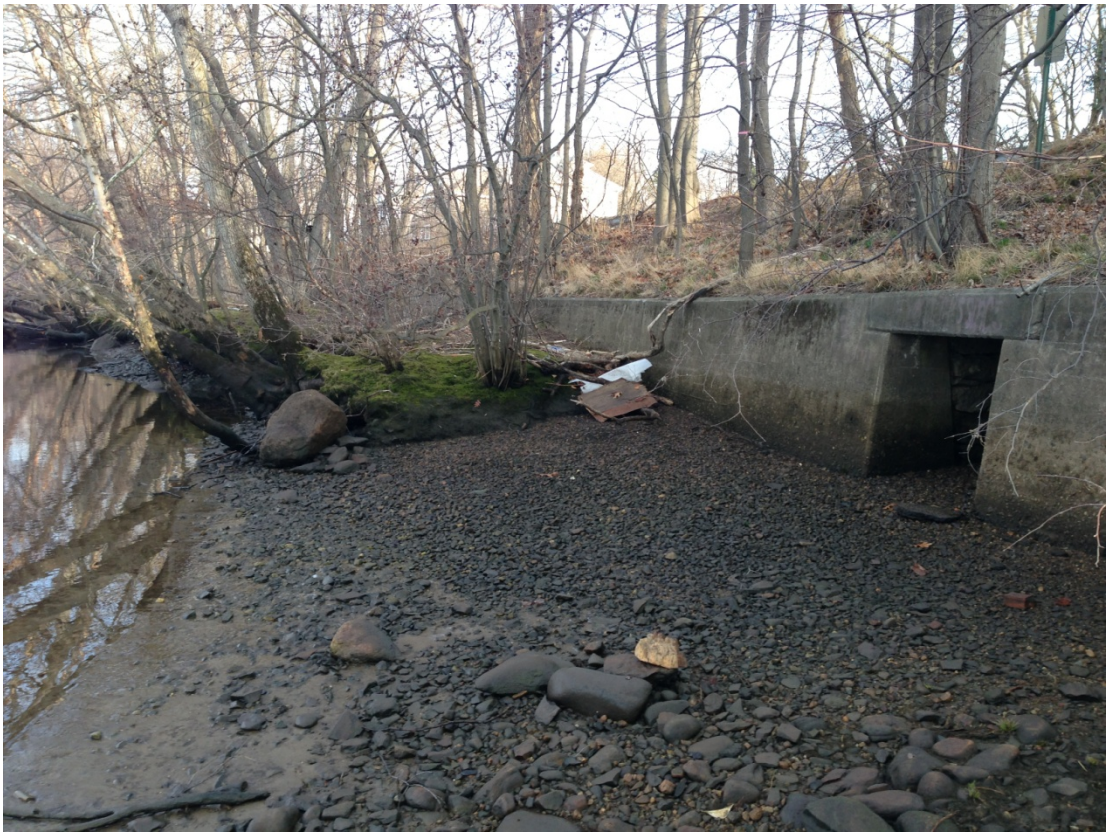


Photo 1: 4/8/13 7:35 am View facing north of CSO #010 near intersection of Water and Boardman Streets. No discharge observed.

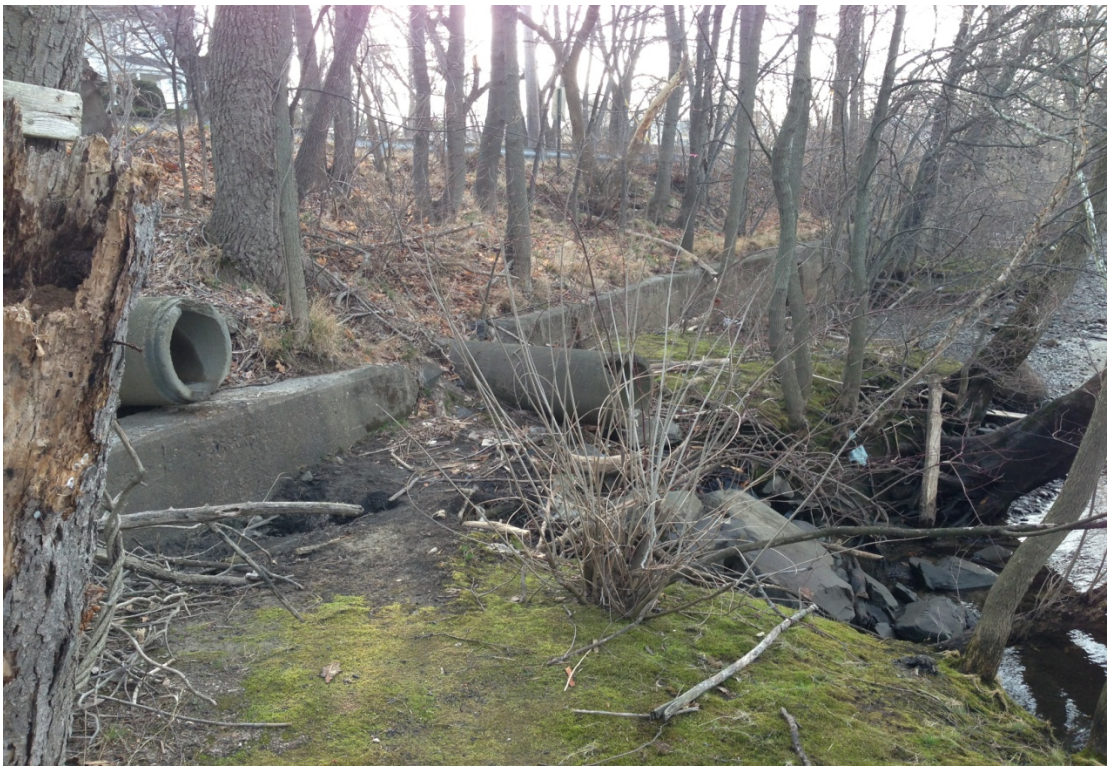


Photo 2: 4/8/13 7:37 am View facing east of two storm water outfalls near intersection of Boardman and Water Streets. No discharge observed.

Haverhill, MA
EPA recon 4.8.13

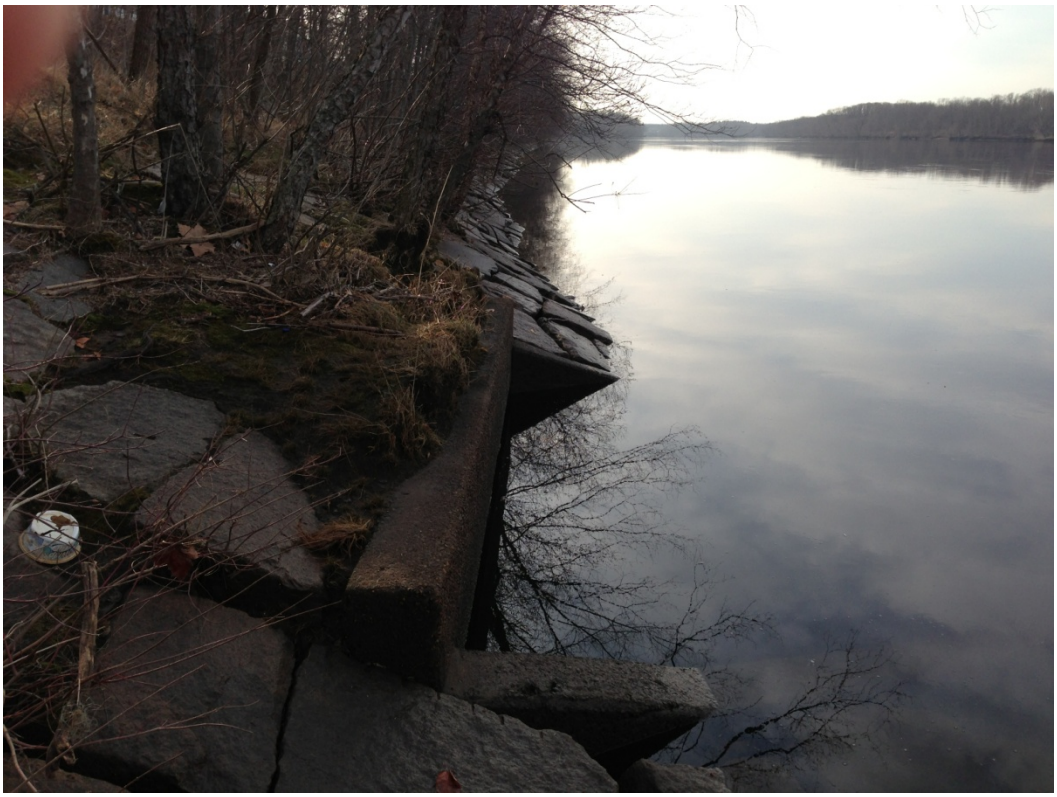


Photo 3: 4/8/13 7:44 am View facing southeast of CSO #013. Outfall almost completely submerged and unable to determine if a discharge occurring.

Photo 4: 4/8/13 7:49 am View facing north of storm water outfall on south side of Water Street between Buttonwoods and John Ward Streets. Discharge <0.1gal/min observed.

Haverhill, MA
EPA recon 4.8.13

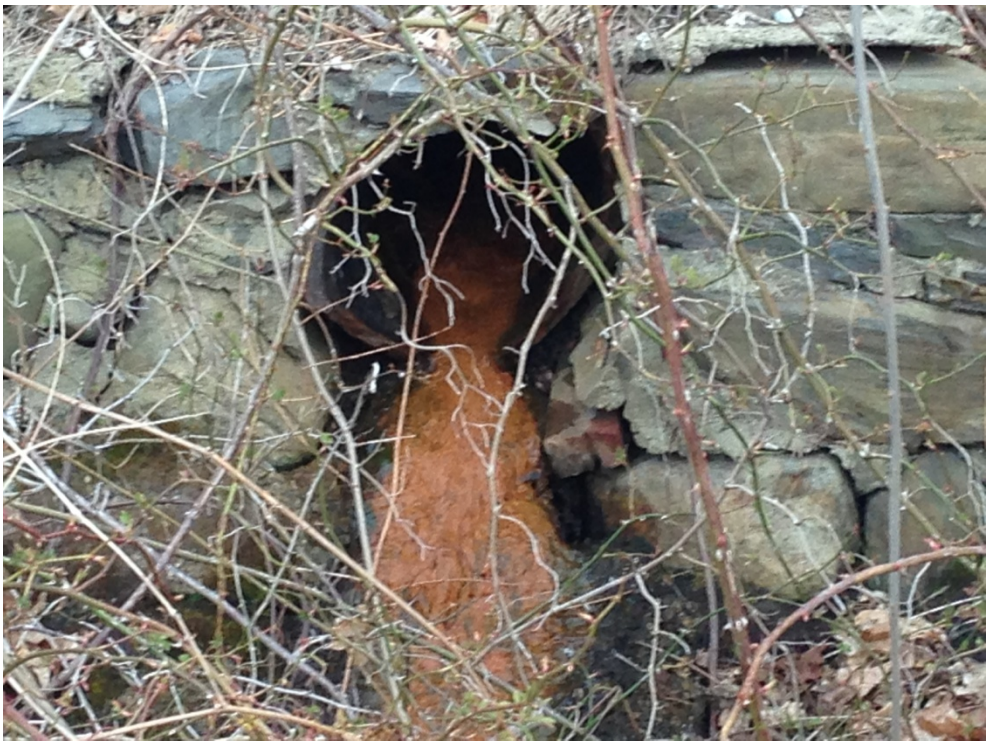


Photo 5: 4/8/13 7:50 am View facing north of storm water outfall on south side of Water Street between Buttonwoods and John Ward Streets. Discharge <0.5gal/min observed with bacterial growth.

Photo 6: 4/8/13 7:52 am View facing north of storm water outfall on south side of Water Street between Buttonwoods and John Ward Streets. Discharge <0.5gal/min observed.

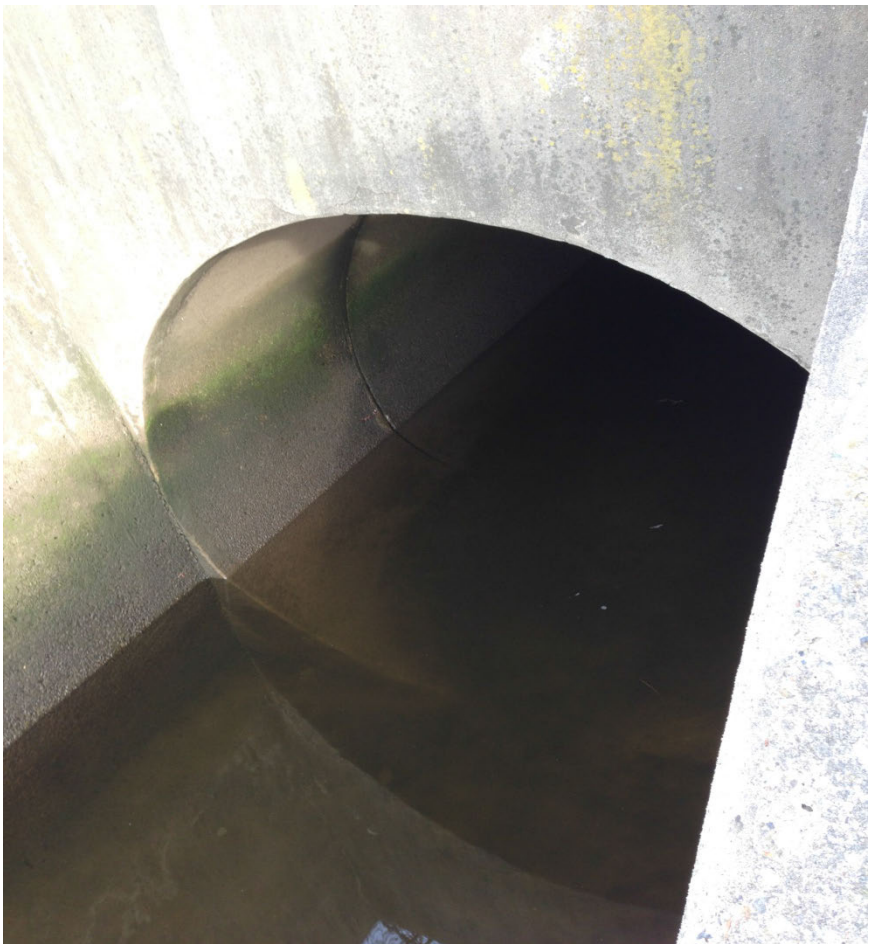


Photo 7: 4/8/13 8:07 am View facing west of CSO #024. Outfall 1/3 submerged – unable to determine if discharging.

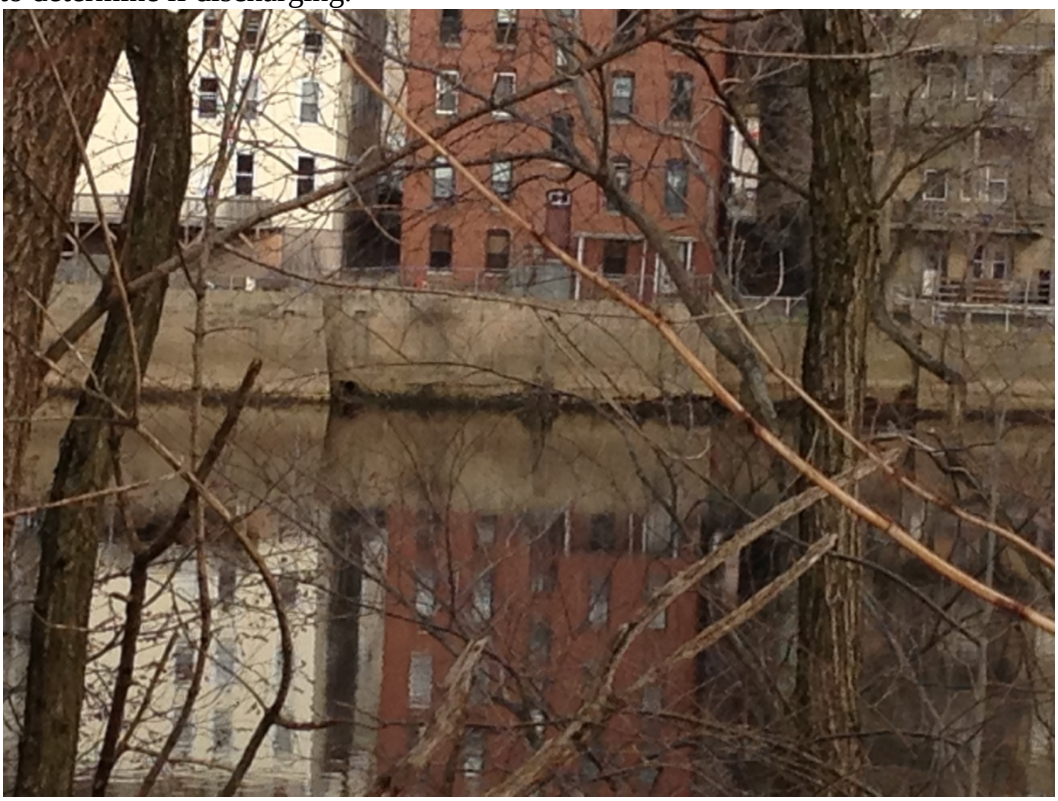


Photo 8: 4/8/13 8:26 am View facing north of approximately 78 River Street. Storm water outfalls can be seen at water line. Photo taken from approximately 34 Railroad Ave., Haverhill.

Haverhill, MA
EPA recon 4.8.13

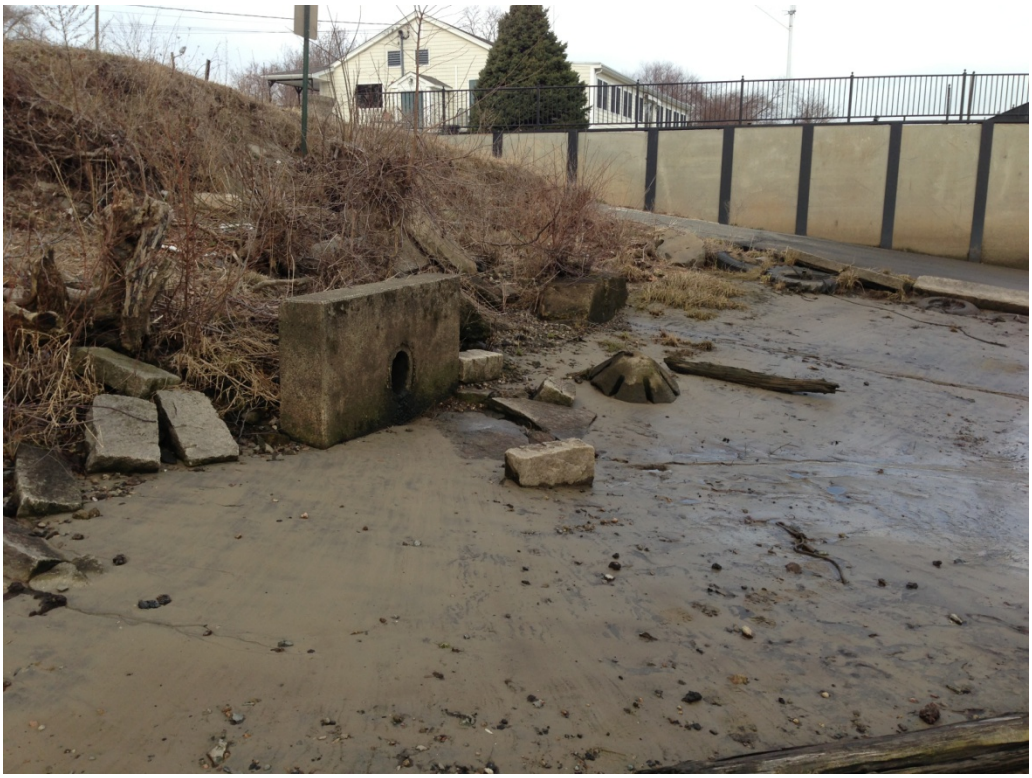


Photo 9: 4/8/13 8:34 am View of CSO #036 No discharge from outfall. Some seepage from hillside behind outfall observed. Located between two boat ramps at Crescent Yacht Club.

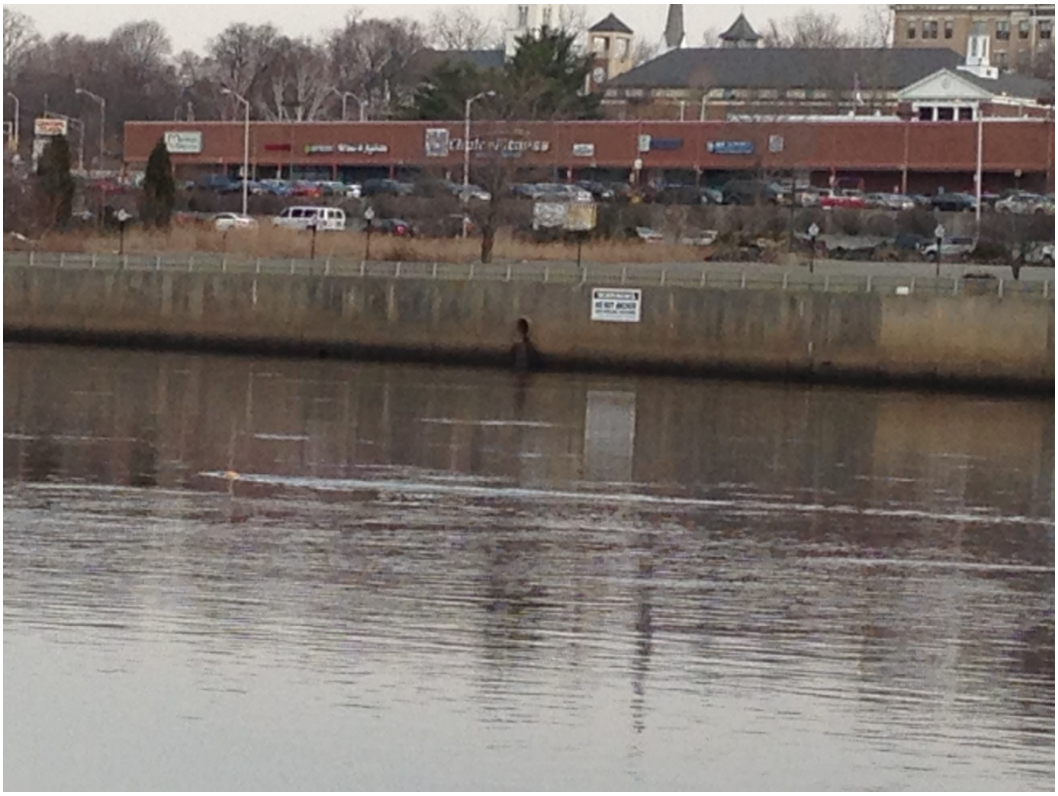


Photo 10: 4/8/13 8:35 am View facing North of stormwater outfall MR 1164 from Crescent Yacht Club.

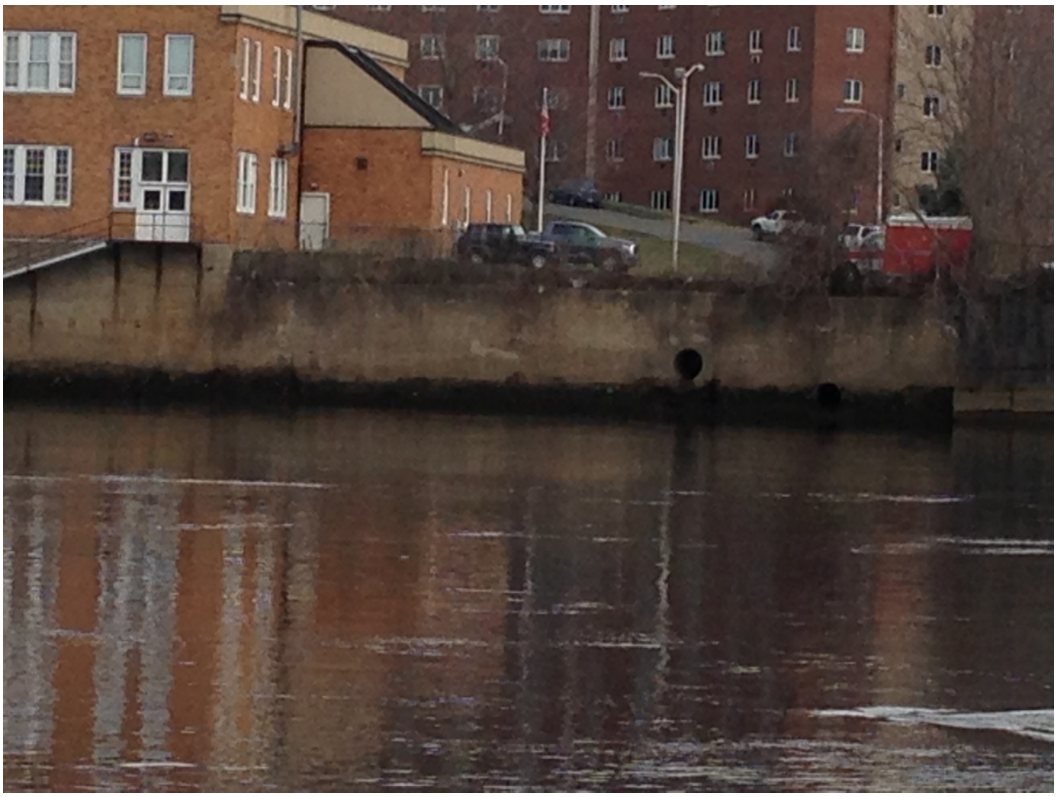


Photo 11: 8:36 am 4/8/13 View facing north from Crescent Yacht Club of storm water outfall MR0608. Unable to determine if flowing at this distance. Water street fire station at left in photo.

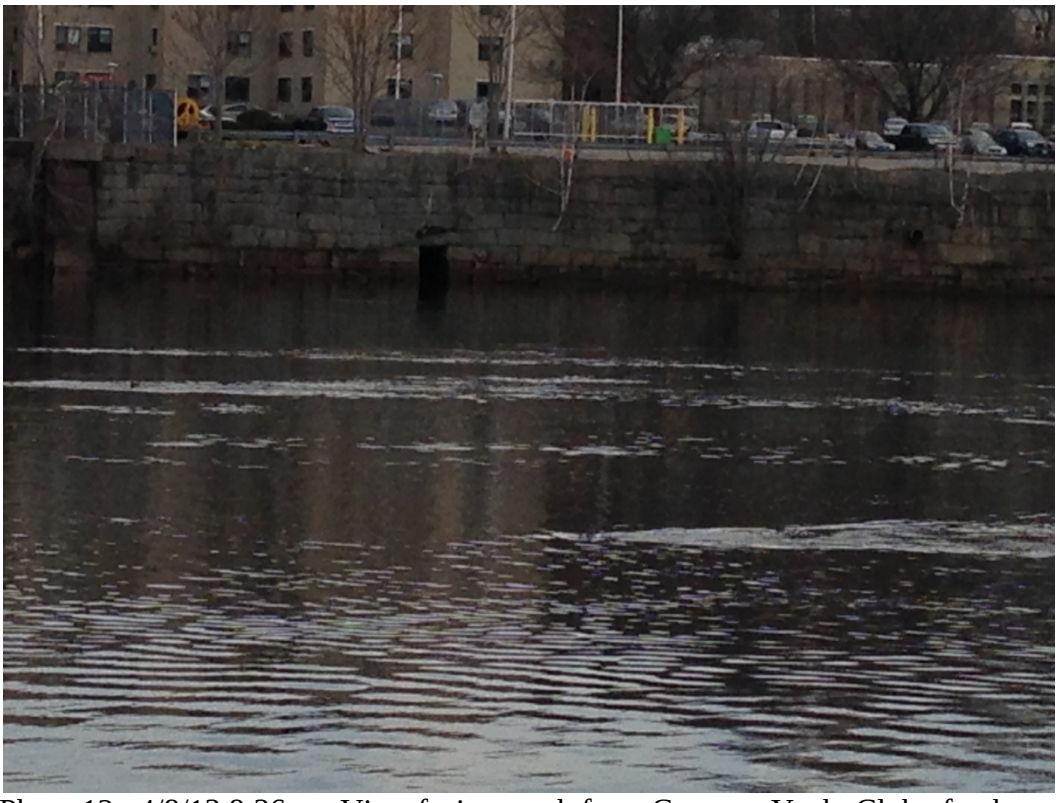


Photo 12: 4/8/13 8:36 am View facing north from Crescent Yacht Club of unknown outfalls along north wall of Merrimack near intersection of Chestnut and River Streets.

Haverhill, MA
EPA recon 4.8.13

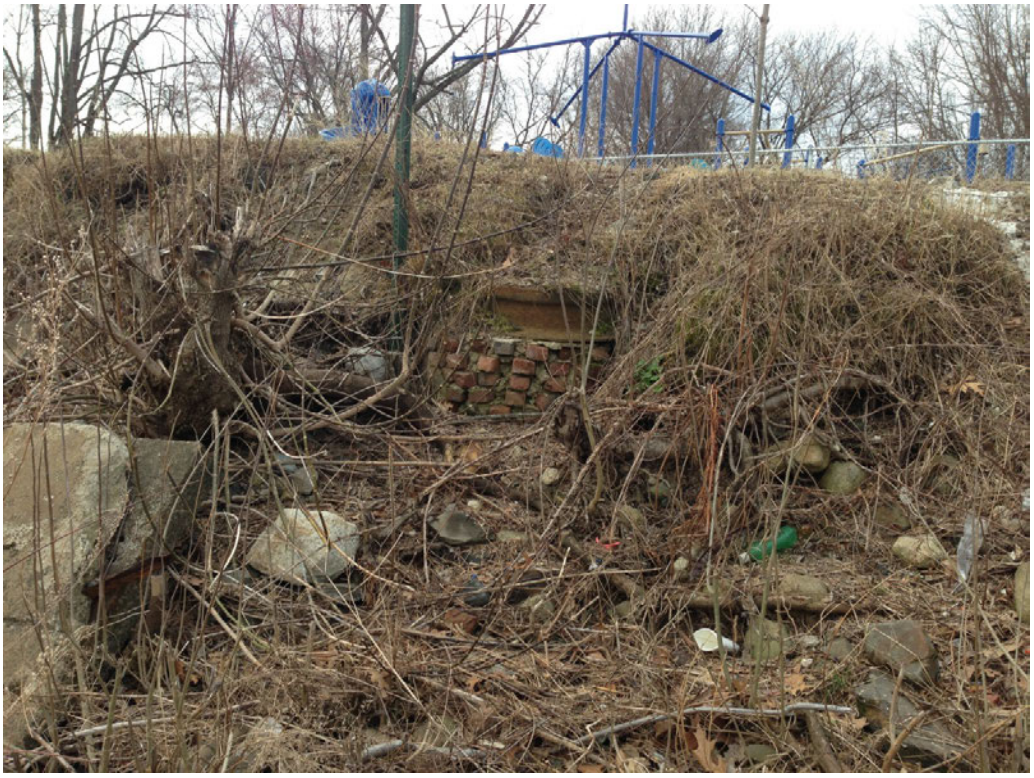


Photo 13: 4/8/13 8:38 am View of sewer manhole structure behind CSO #036. Some seepage was observed from this hillside but unable to determine if discharging from manhole.

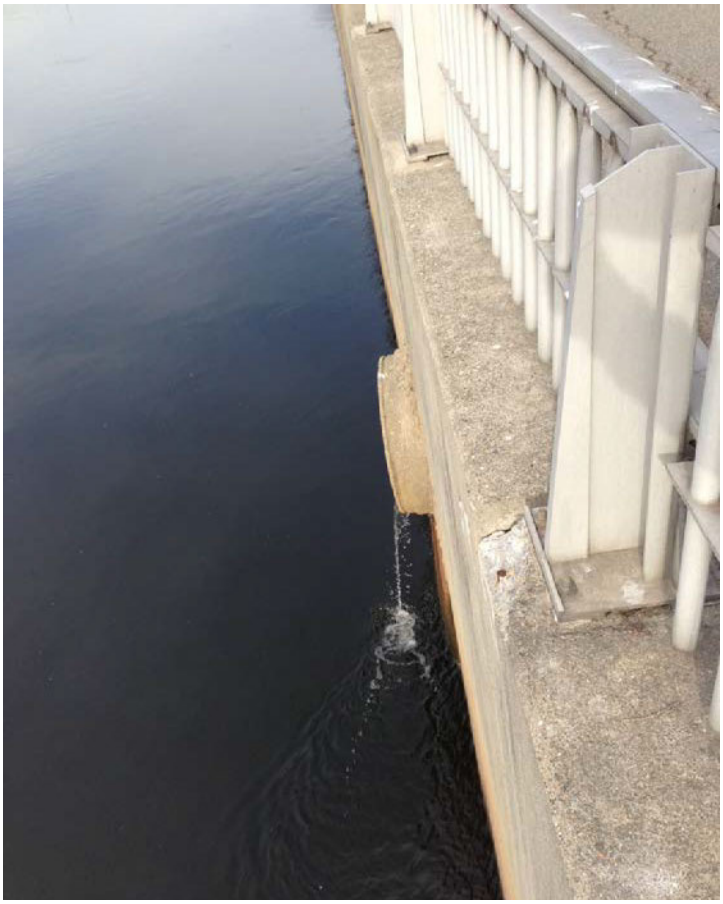


Photo 14: 4/8/13 8:48 am View of stormwater outfall MR 1164. Flow approximately 1 gal/min.

Haverhill, MA
EPA recon 4.8.13

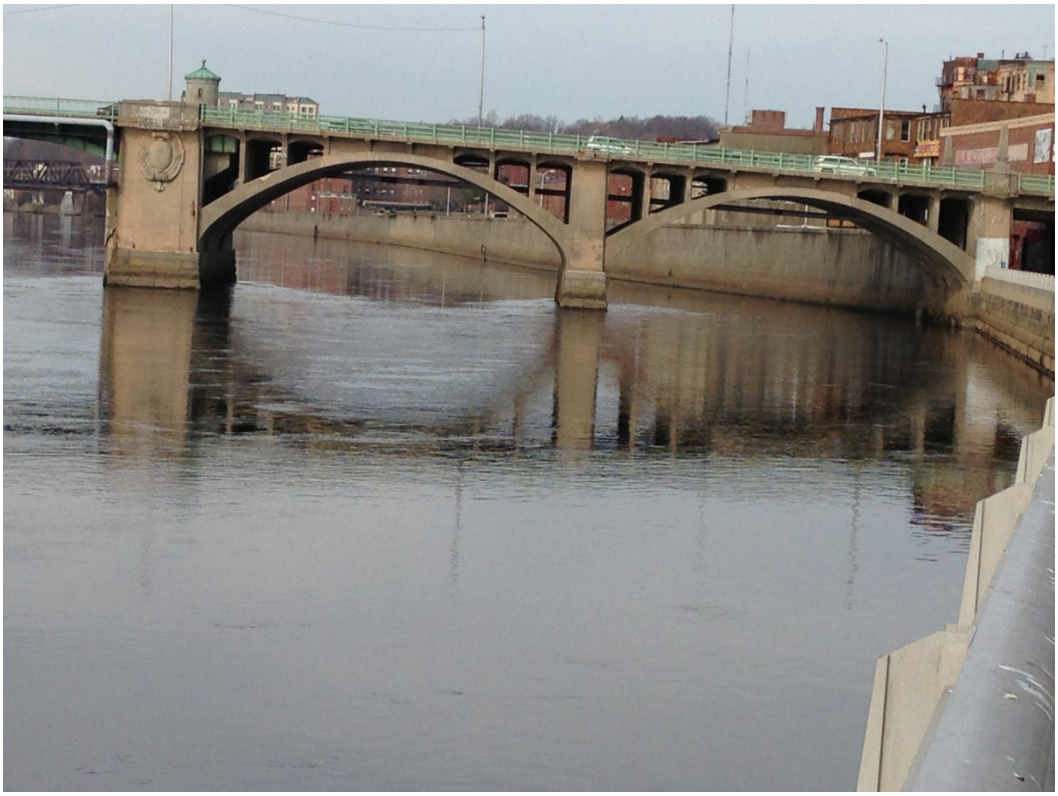


Photo 15: 4/8/13 8:48 am View taken from location of MR 1164 showing flood wall along north side of Merrimack, downtown Haverhill, MA.

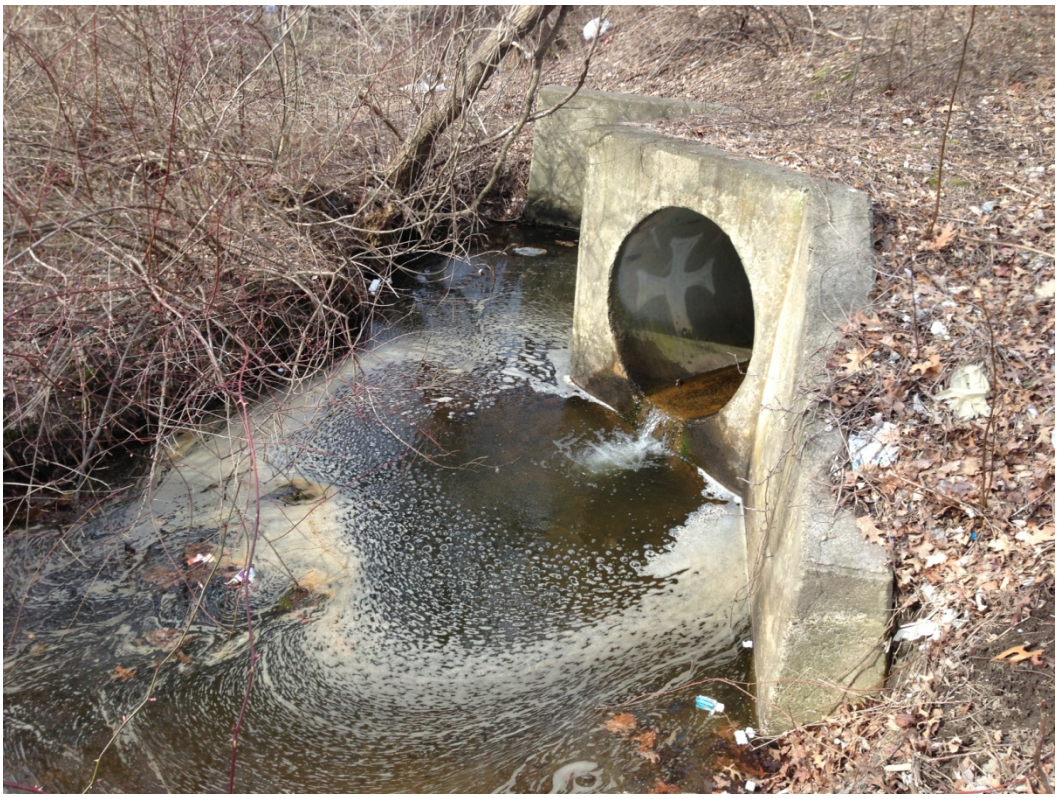


Photo 16: 4/8/13 9:08 am. View facing west of storm water outfall LR 0952 to the Little River, south side of Cashmans Field Playground. Strong chemical/sewage odor, brown foam, and some bacterial growth in pipe. Discharge approximately 5 gal/min.

Haverhill, MA
EPA recon 4.8.13

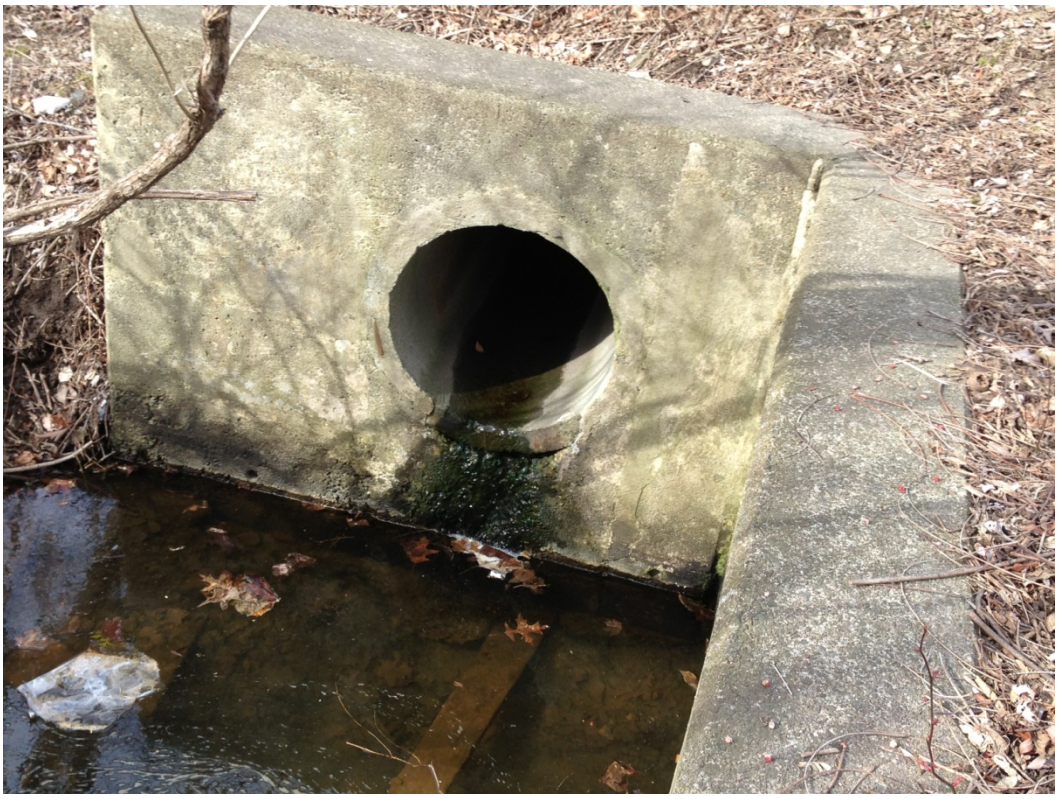
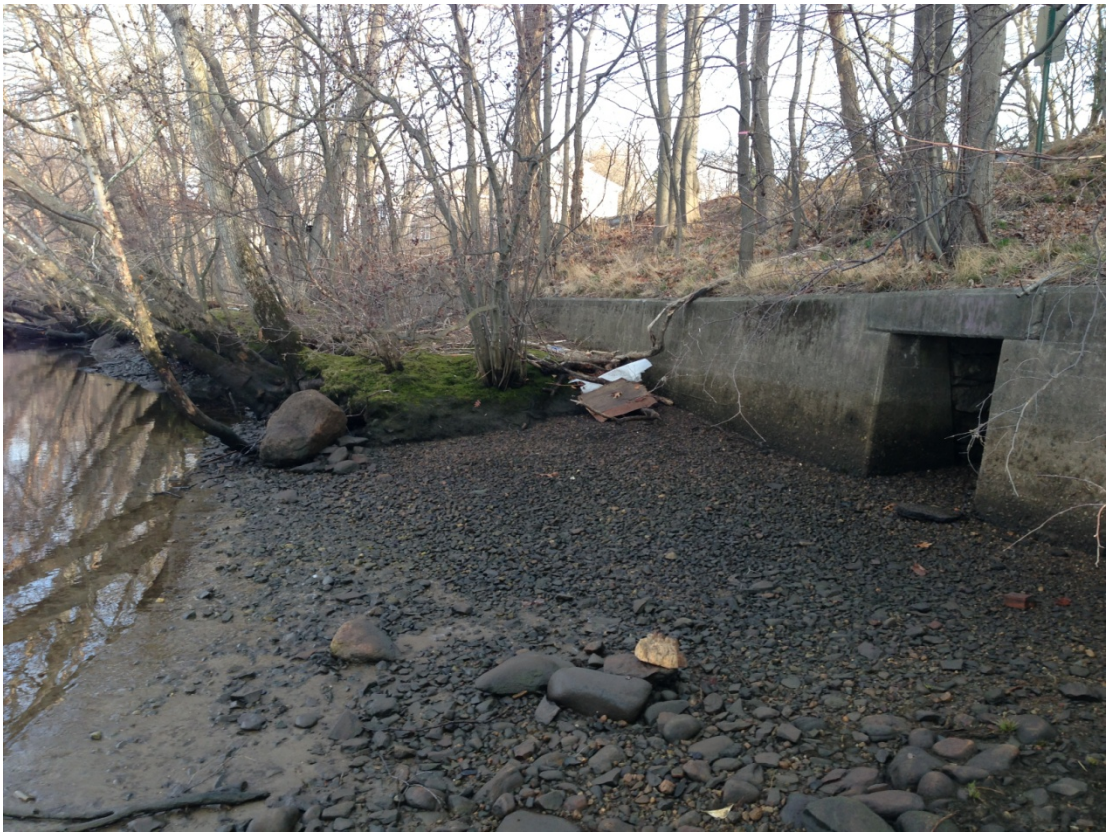


Photo 17: 4/8/13 9:09 am. Photo of unnamed outfall next to (southwest by 10 feet) outfall LR0952. Low flow (<.5 gal/min), some algae growth, and some white suds beneath outfall pipe. No obvious odor.



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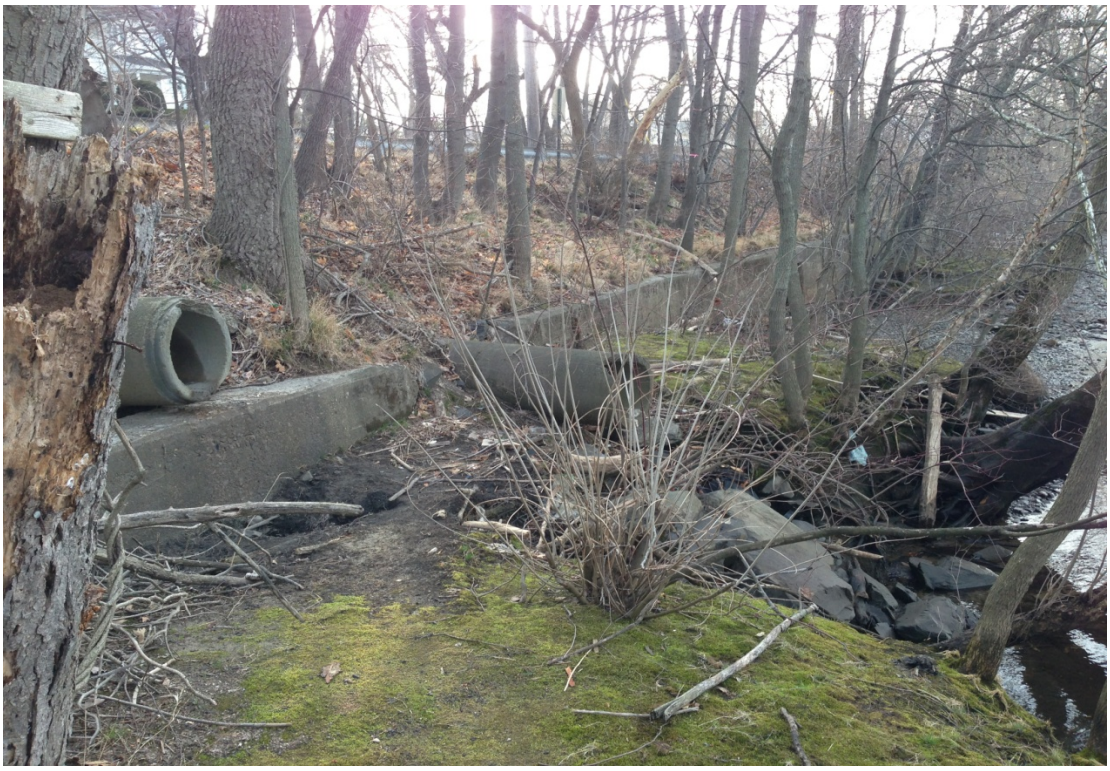

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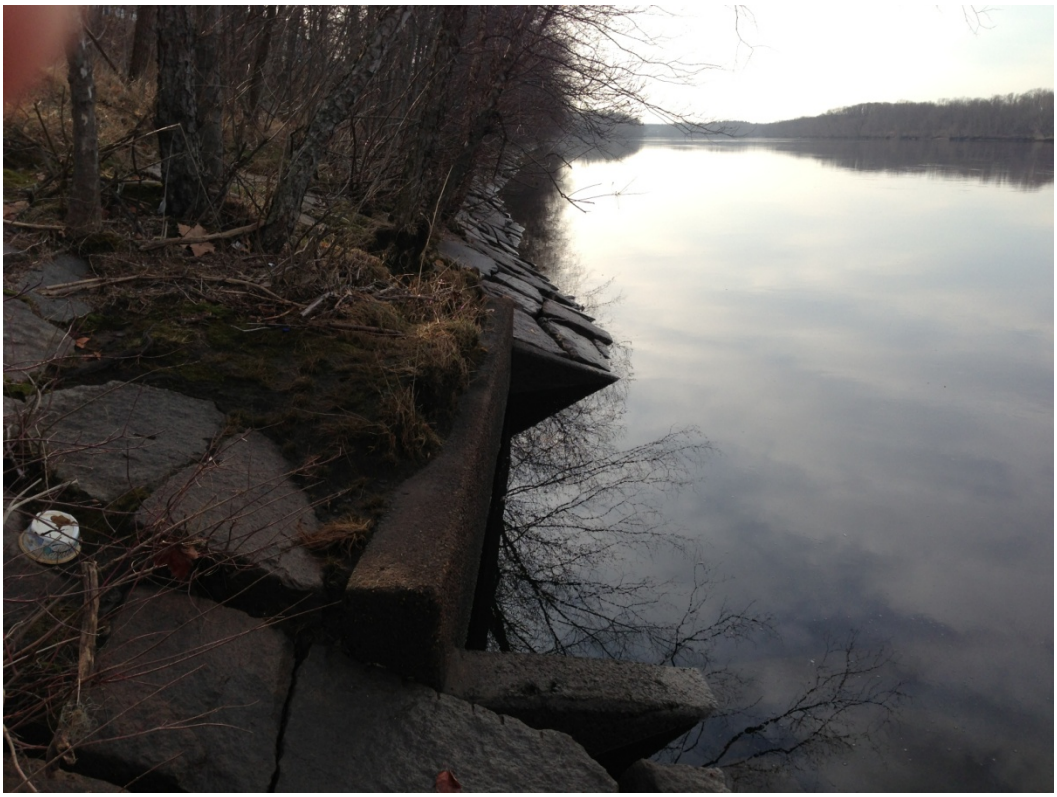
Haverhill, MA
EPA recon 4.8.13



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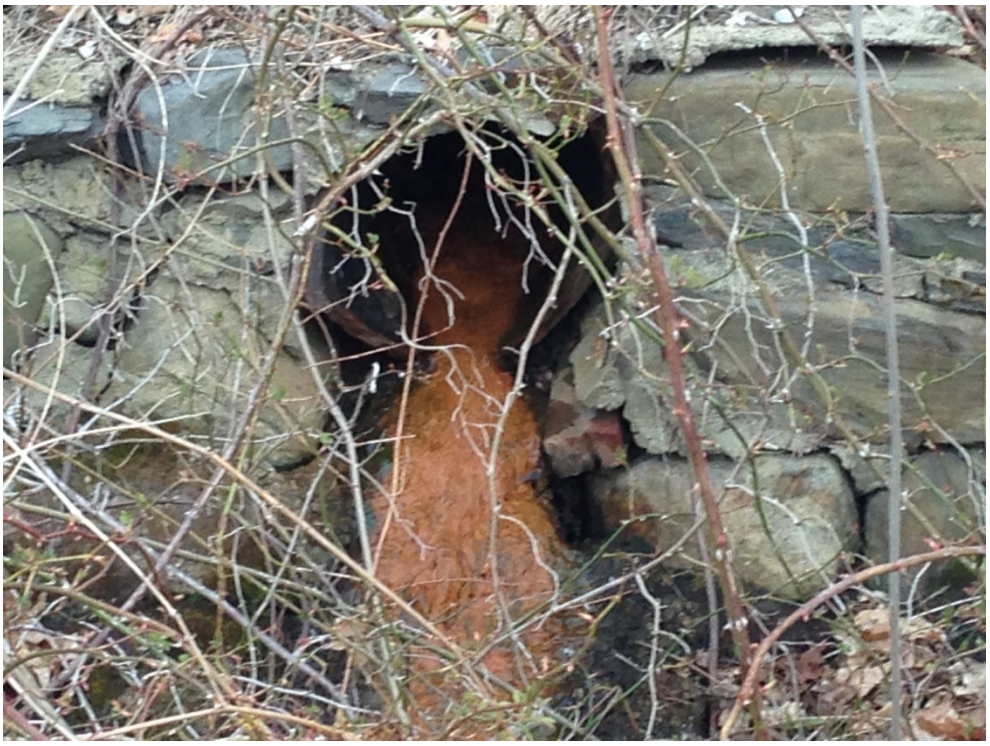
Haverhill, MA
EPA recon 4.8.13



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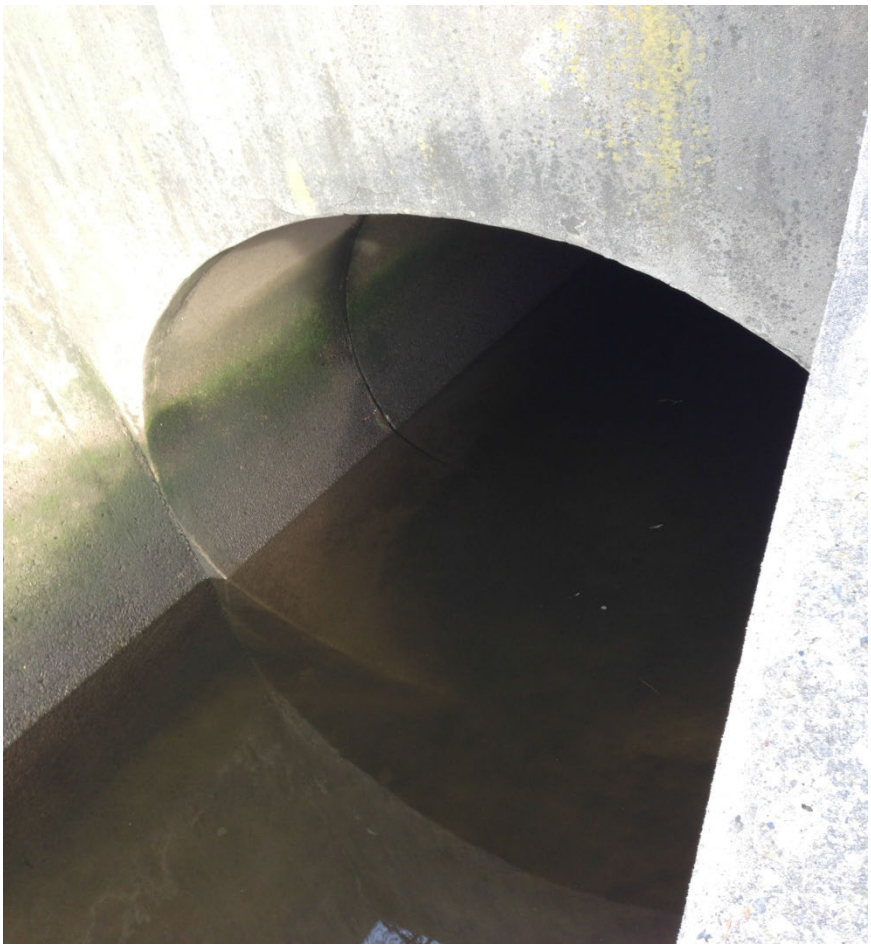


Photo 7: 4/8/13 8:07 am View facing west of CSO #024. Outfall 1/3 submerged – unable to determine if discharging.

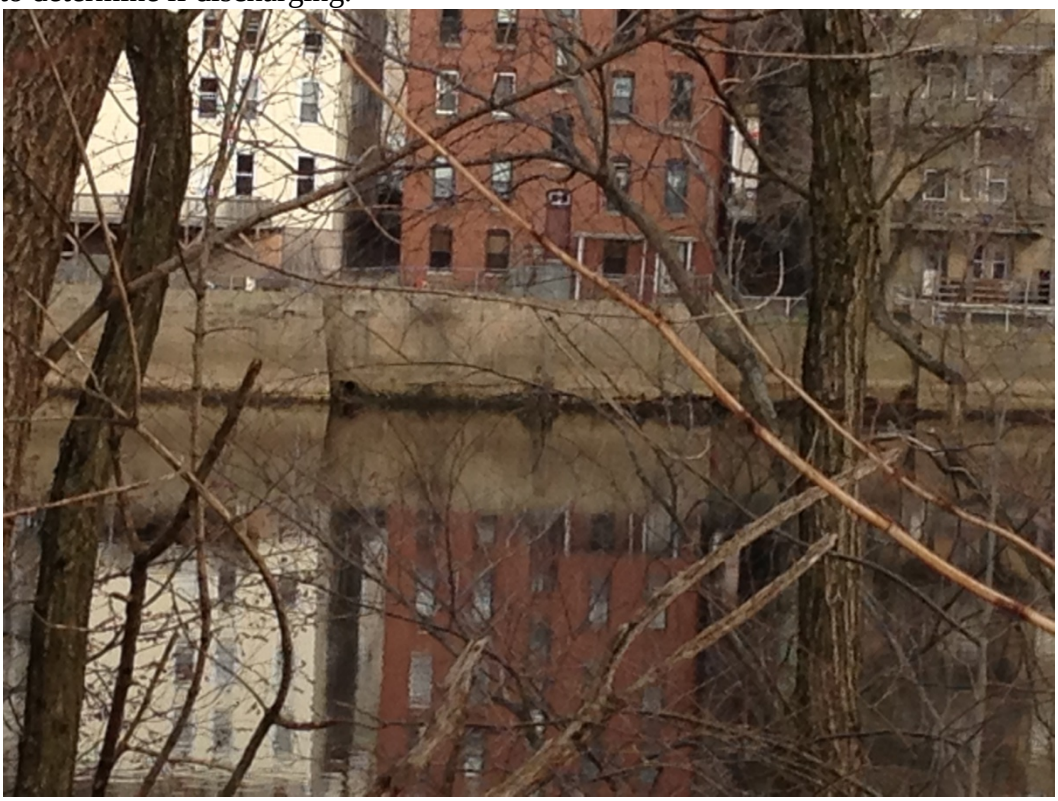


Photo 8: 4/8/13 8:26 am View facing north of approximately 78 River Street. Storm water outfalls can be seen at water line. Photo taken from approximately 34 Railroad Ave., Haverhill.

Haverhill, MA
EPA recon 4.8.13

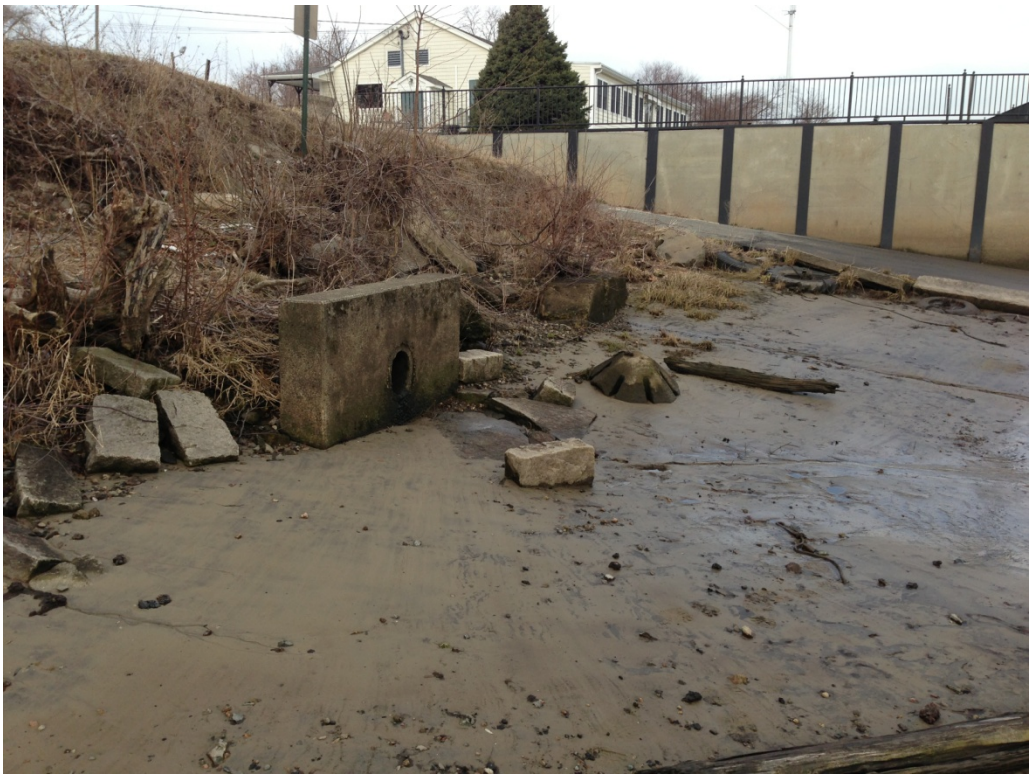


Photo 9: 4/8/13 8:34 am View of CSO #036 No discharge from outfall. Some seepage from hillside behind outfall observed. Located between two boat ramps at Crescent Yacht Club.

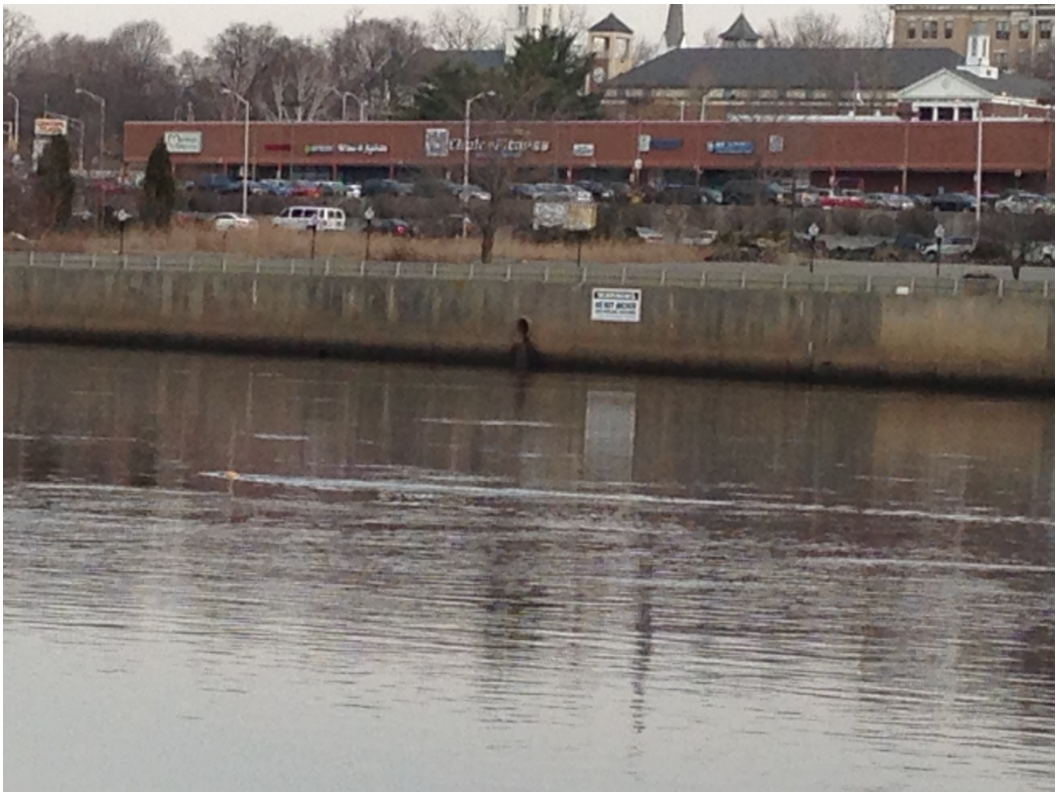


Photo 10: 4/8/13 8:35 am View facing North of stormwater outfall MR 1164 from Crescent Yacht Club.

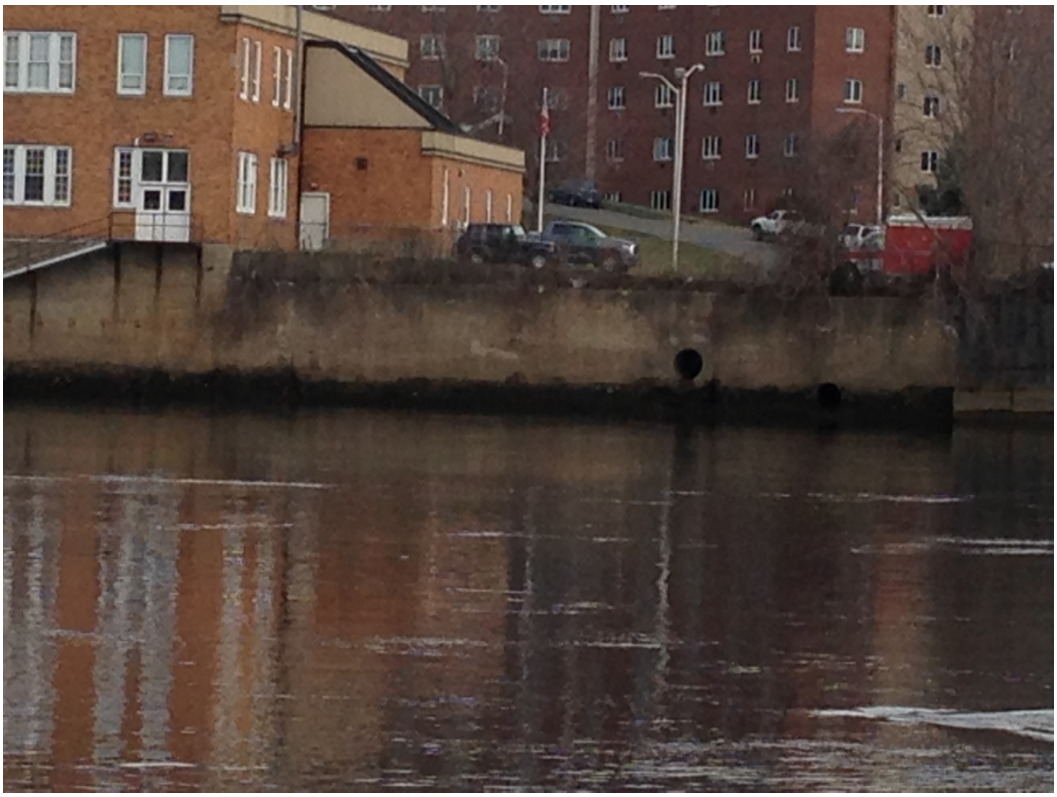


Photo 11: 8:36 am 4/8/13 View facing north from Crescent Yacht Club of storm water outfall MR0608. Unable to determine if flowing at this distance. Water street fire station at left in photo.

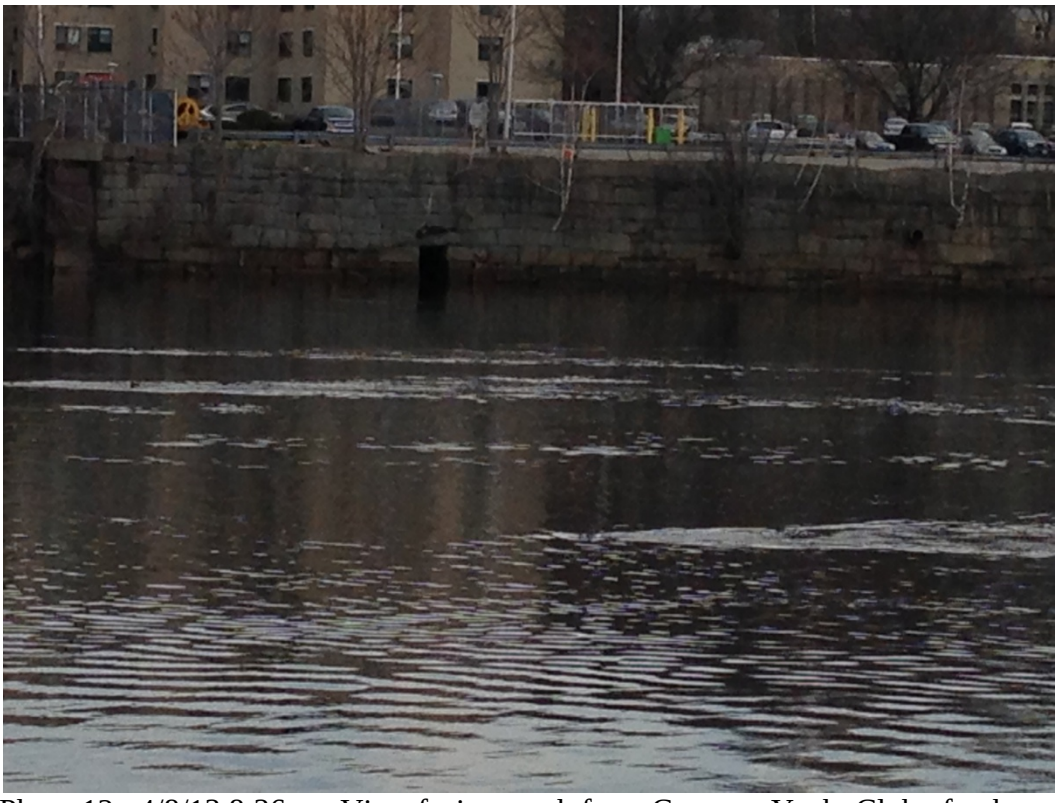


Photo 12: 4/8/13 8:36 am View facing north from Crescent Yacht Club of unknown outfalls along north wall of Merrimack near intersection of Chestnut and River Streets.

Haverhill, MA
EPA recon 4.8.13

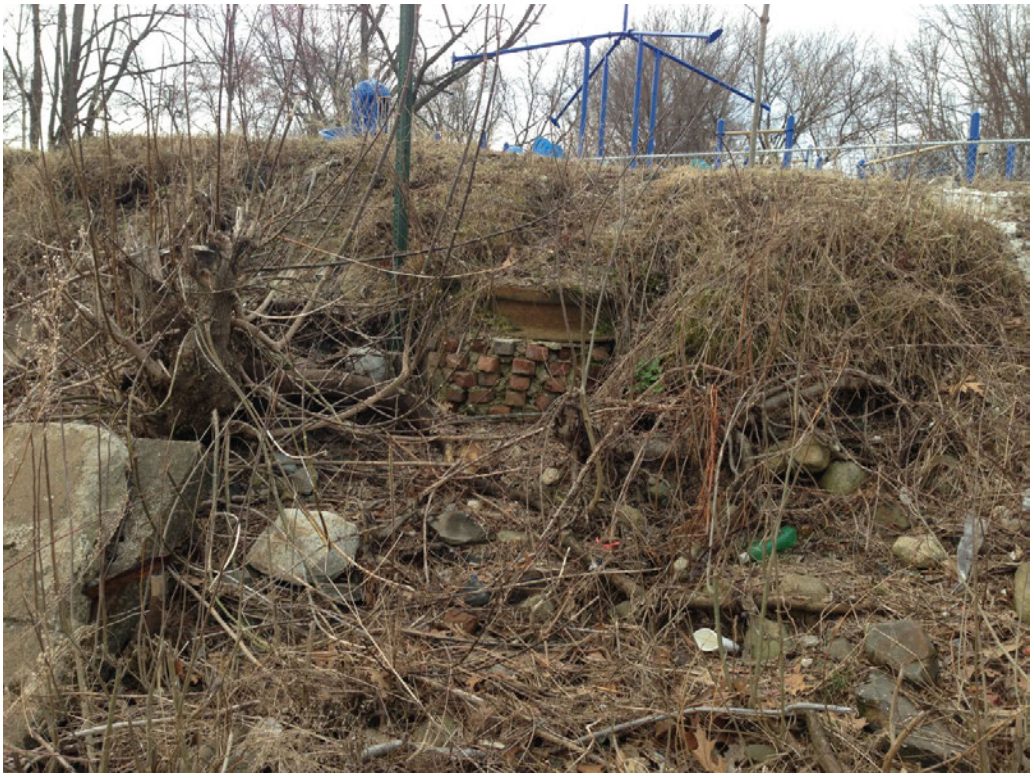


Photo 13: 4/8/13 8:38 am View of sewer manhole structure behind CSO #036. Some seepage was observed from this hillside but unable to determine if discharging from manhole.

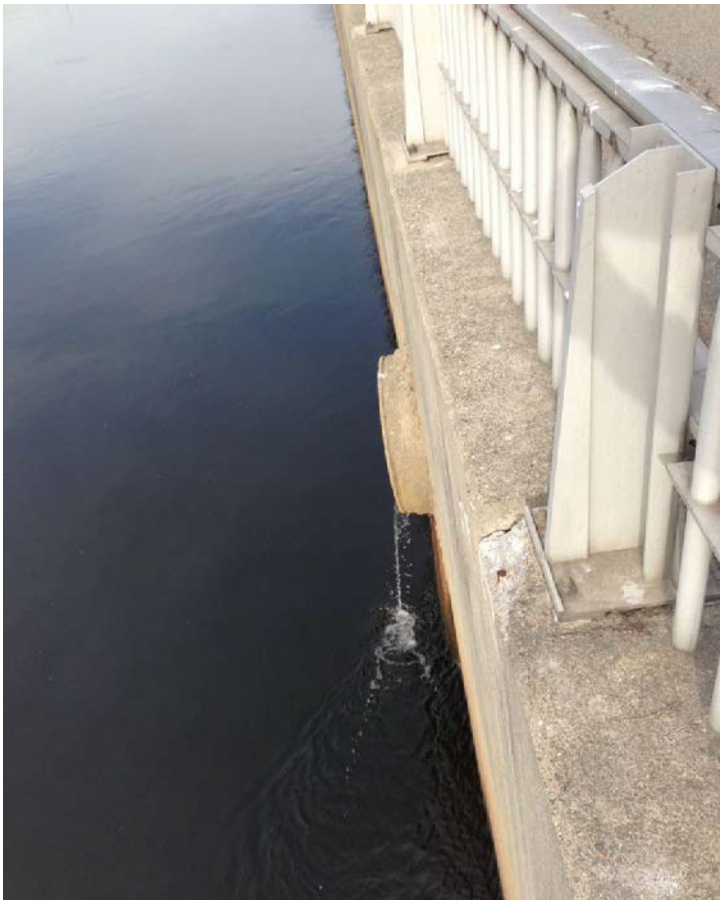


Photo 14: 4/8/13 8:48 am View of stormwater outfall MR 1164. Flow approximately 1 gal/min.

Haverhill, MA
EPA recon 4.8.13

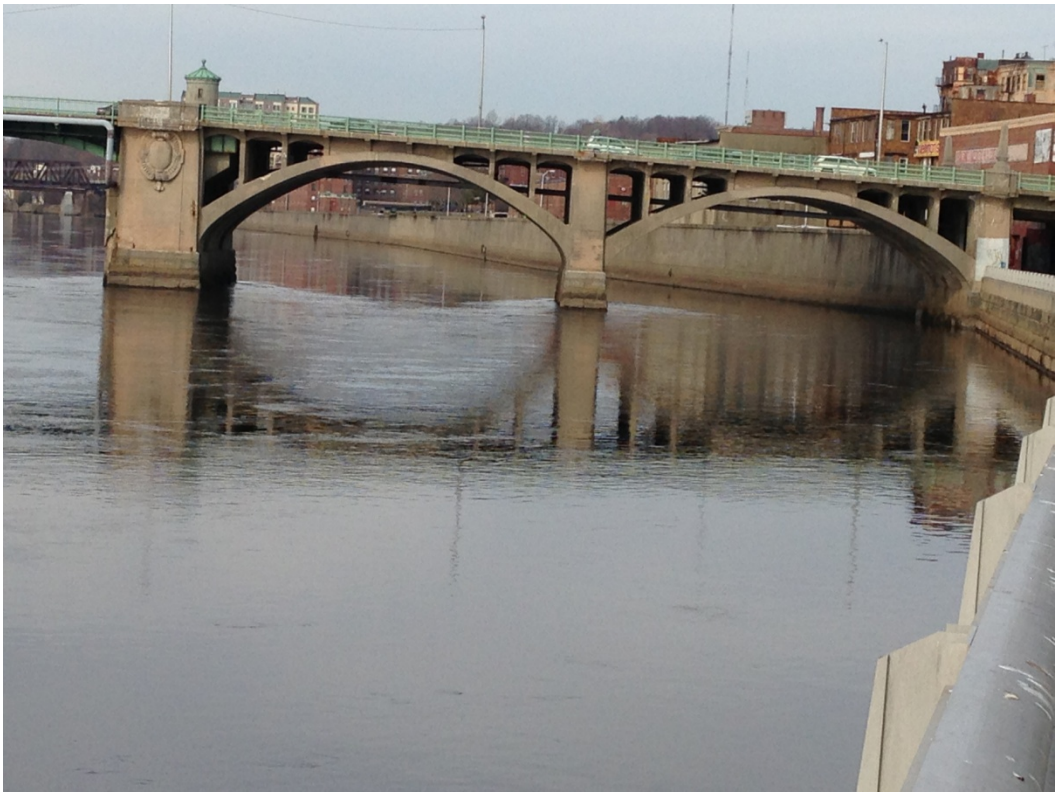


Photo 15: 4/8/13 8:48 am View taken from location of MR 1164 showing flood wall along north side of Merrimack, downtown Haverhill, MA.

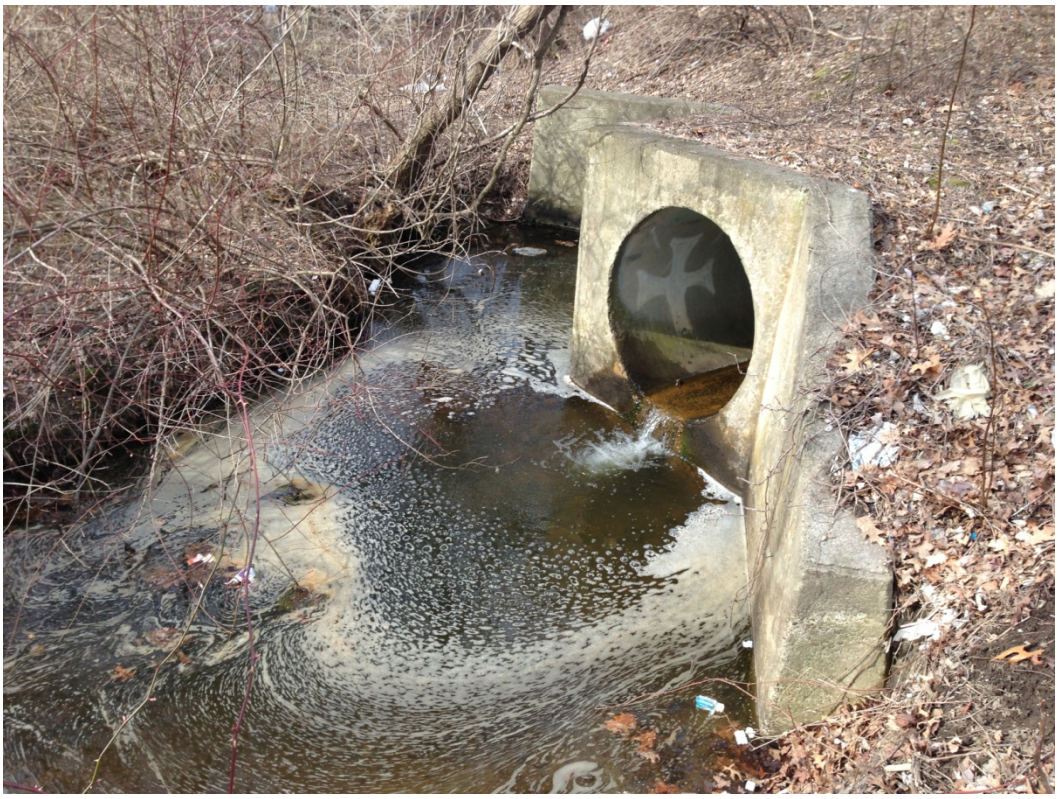


Photo 16: 4/8/13 9:08 am. View facing west of storm water outfall LR 0952 to the Little River, south side of Cashmans Field Playground. Strong chemical/sewage odor, brown foam, and some bacterial growth in pipe. Discharge approximately 5 gal/min.

Haverhill, MA
EPA recon 4.8.13

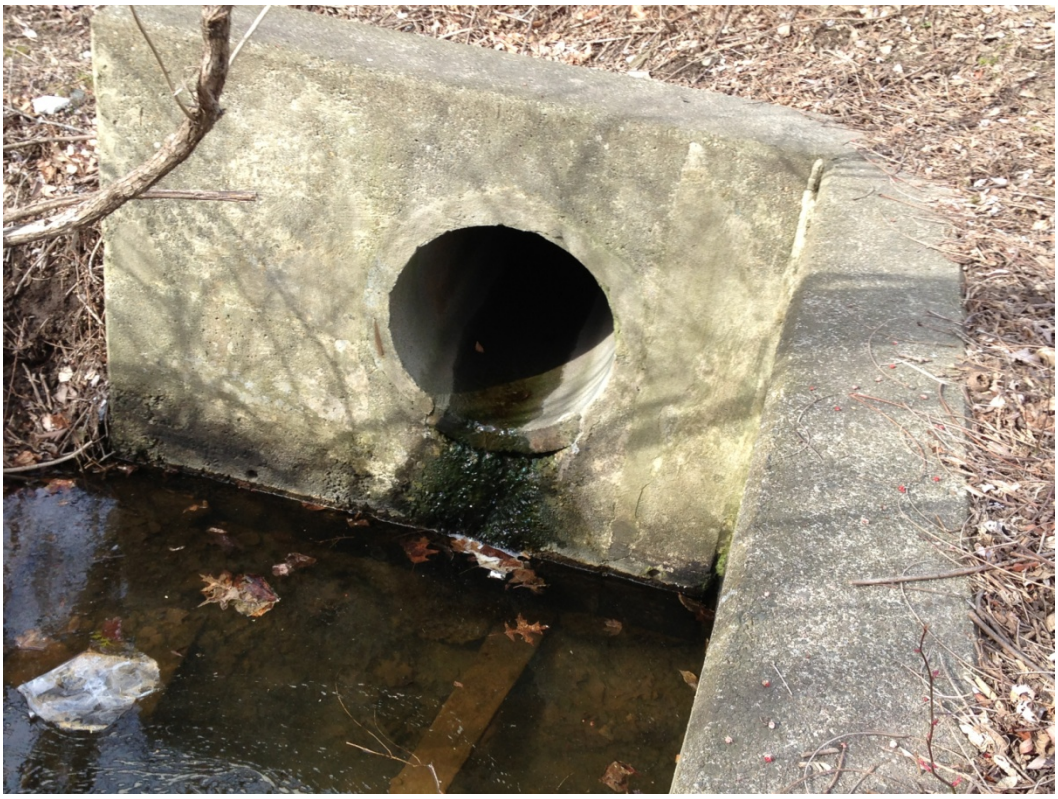


Photo 17: 4/8/13 9:09 am. Photo of unnamed outfall next to (southwest by 10 feet) outfall LR0952. Low flow (<.5 gal/min), some algae growth, and some white suds beneath outfall pipe. No obvious odor.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

DATE: May 21, 2013

SUBJ: City of Haverhill, MA MS4 Inspection
Haverhill, Massachusetts

FROM: Todd Borci, Enforcement Officer

TO: File

REQUESTED BY: Todd Borci (OES)

I. Background Information

A. Date, Time of inspection: Tuesday, May 7, 2013, 0800 Hrs

B. Weather Conditions: Sunny, approximately 55 degrees F

C. USEPA Representatives: Todd Borci
Jerry Keefe

D. Site Representative: Paul Jessel, Supervisor of Water and Wastwater
City of Haverhill
Water and Wastewater Department
4 Summer Street, Haverhill, MA 01830
Phone: (978) 374-2382

E. Address: Various locations within the City of Haverhill, Massachusetts

II. Purpose of Inspection

The purpose of the inspection was to identify illicit connections or illegal discharges within the City of Haverhill Municipal Separate Stormwater Sewer System (MS4) that may adversely impact the water quality in the Merrimack River or its tributaries, including the Little River. Samples were collected from four (4) stormwater outfalls, and one (1) stream segment of the Merrimack River in accordance with the Environmental Investigations and Analysis (EIA) unit Stormwater Program Plan.

III. Description of Sampling Locations

- Stormwater outfall identified as location BWOOD1 located along Buttonwood river trail approximately across Water Street from the Haverhill Historical Society
- Merrimack River sample collected approximately 50 upstream of BWOOD1 identified as location MR01
- Stormwater outfall located on the north side of the river approximately across from Bethany Ave identified as location Beth1
- Approximately 12" diameter stormwater outfall located adjacent to Cashman Field off of Hilldale Ave. identified as location Cash01
- Approximately 24" stormwater outfall located adjacent to Cashman Field off of Hilldale Ave. identified as location Cash02

IV. Inspection Observations and Findings

On Tuesday, May 7, 2013, EPA inspectors Todd Borci and Jerry Keefe conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Haverhill MS4 at two (2) locations which discharge into the Merrimack River, two (2) locations that discharge into the Little River (a tributary of the Merrimack River), and one (1) sample from the Merrimack River downstream of downtown Haverhill.

The inspection started in Haverhill at approximately 0800 hrs. At the time of the inspection, the weather was sunny and approximately 55 degrees Fahrenheit. According to precipitation records for Lawrence Airport, no precipitation had occurred for over 10 days antecedent to the day of the inspection.

The City of Haverhill is covered under the 2003 General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). A copy the City of Haverhill Notice of Intent (NOI) has been posted online, and is dated July 8, 2003. The City of Haverhill EPA NPDES permit number is MAR041197.

Several sampling locations described in Section III were field screened using test kits for ammonia and surfactants, and analyzed at the EPA New England Regional Laboratory (NERL) for E.Coli, Enterococcus, and pharmaceutical and personal care products (PPCPs) including: Atenolol, Acetaminophen, Cotinine, 1,7-Dimethylxanthine, Caffeine, Carbamazepine, and Metoprolol. In-situ measurements for conductivity, salinity, and temperature were also recorded. Field test kits were not conducted on the Merrimack River grab sample ("MR01"). The following tables summarize the findings. Photographs are included. Laboratory results are anticipated to be available by the end of May 2013.

Attachments → Photographs

End of Report

Summary of Haverhill, MA MS4 Inspection, May 7, 2013

Sample ID	BWOOD1	MR01	Beth1	Cash01	Cash02
Time	0845	0850	0930	1000	1018
Description of Location	Outfall grab sample south of Water street across from Haverhill Historical Society	Merrimack River sample approx. 50 feet upstream of BWOOD1	Haverhill outfall sample –north flood wall – in line with Bethany Ave.	12” Outfall located south of Cashman Field on Hilldale Ave	24” outfall located south of Cashman Field on Hilldale Ave-adjacent to Cash01
Physical Observations	Orange coloring and bacterial growth.	Flowing downstream – clear.	Flow 5 to 10 gpm, some orange sed in pipe	Trickle flow, chemical odor, some algae growth in pipe.	30 to 40 gpm flow, chemical odor, brown foam in plunge pool.
Temperature, ºC	12.9	14.7	14.8	13.6	13.3
Specific Conductivity, uS	266.8	156.4	1345	758	745
Salinity, ppt	0.1	0.8	0.8	0.4	0.4
Ammonia, mg/l	0	NA	0	0.1	0
Total Chlorine, mg/l	NA	NA	NA	NA	NA
Detergent, mg/l	0.1	NA	0.25	0.2	0.2

NA: Not analyzed
GPM: Gallon per minute

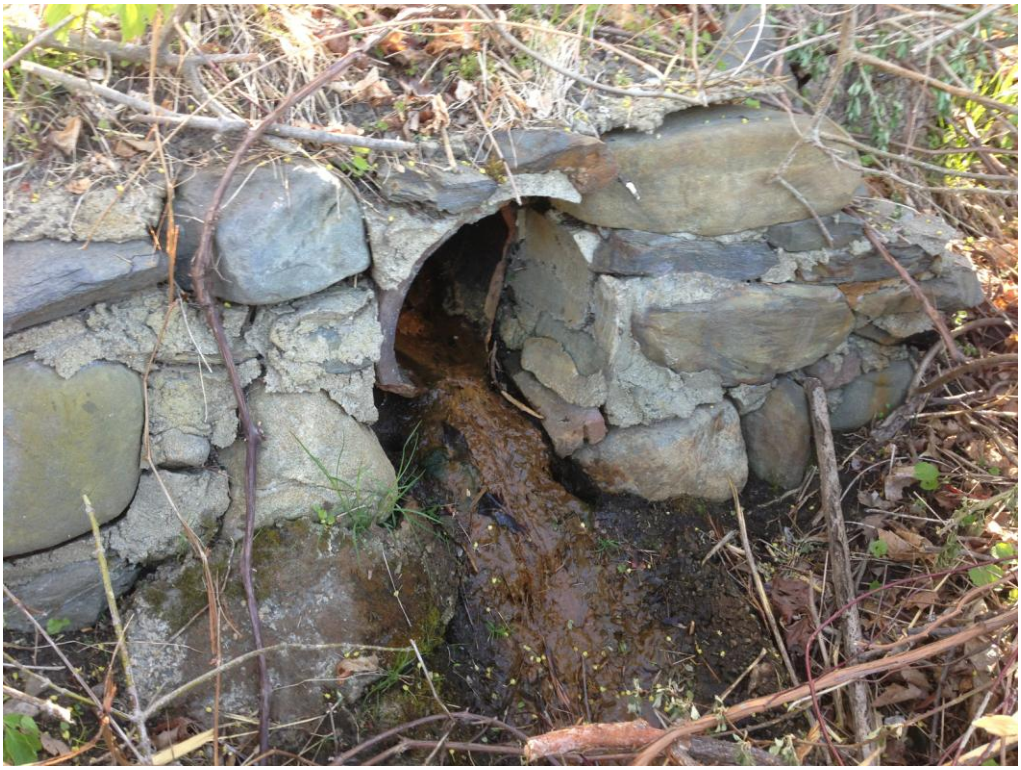


Photo 1: Outfall is location BWOOD1 – note orange staining and bacterial/algae growth.

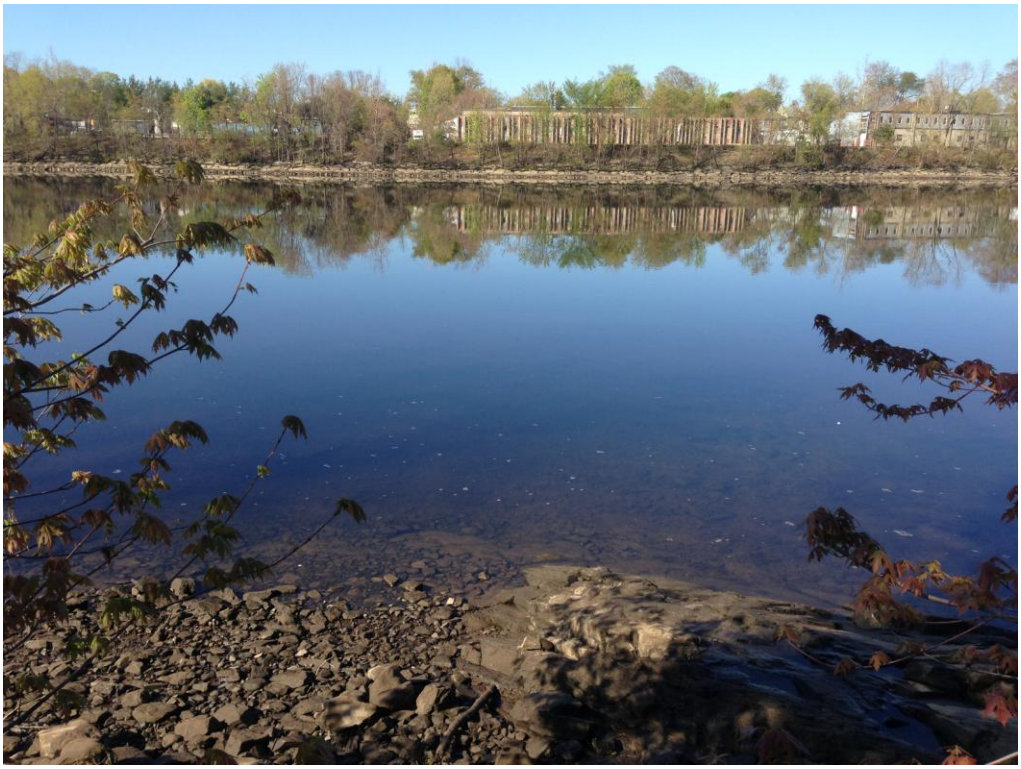


Photo 2: Location MR01 on north bank of Merrimack River approximately 50 feet upstream of BWOOD1.

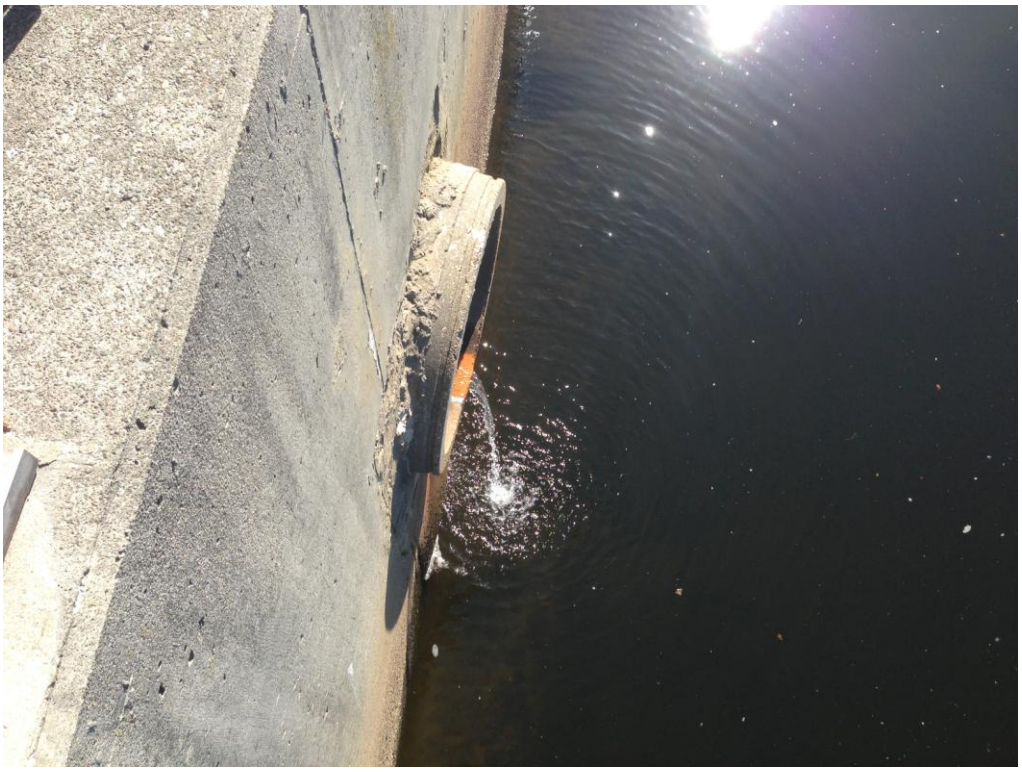


Photo 3: Sample location Beth1- note orange sediment in pipe.

Photo 4: Location “Cash01” south of Cashman Field on Hilldale Ave.

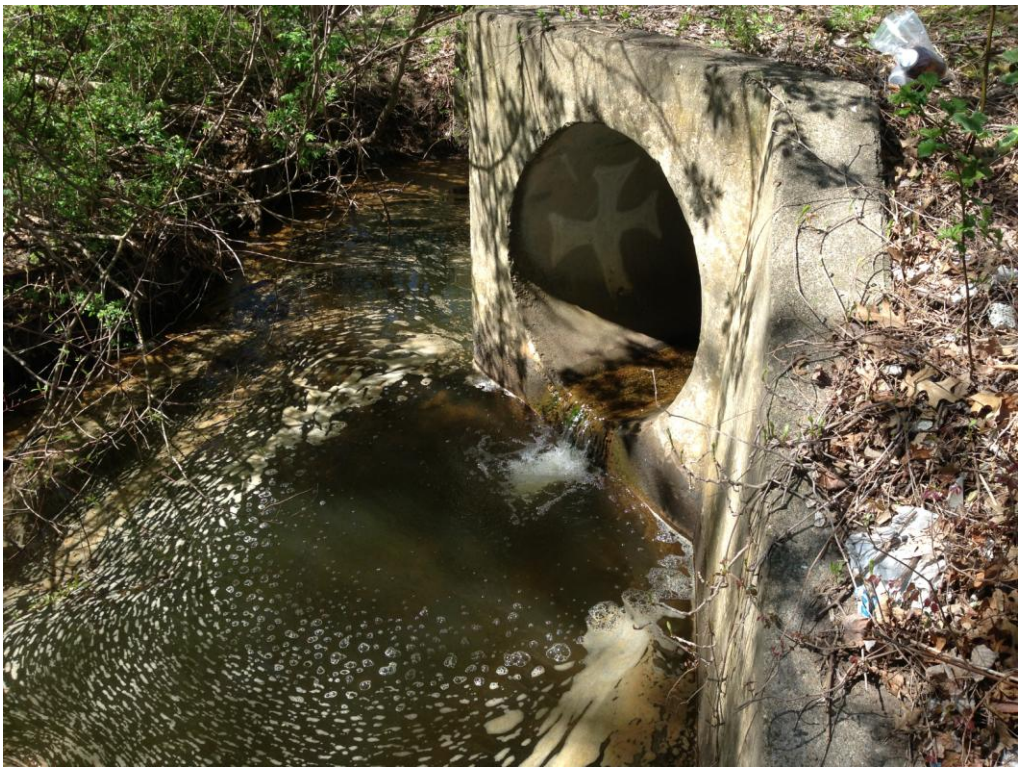


Photo 5: Location Cash02- south of Cashman Field on Hilldale Ave – Cash01 is obscured by the larger Cash02 outfall – note brown foam.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

DATE: May 22, 2013

SUBJ: City of Haverhill, MA MS4 Inspection
Haverhill, Massachusetts

FROM: Todd Borci, Enforcement Officer

TO: File

REQUESTED BY: Todd Borci (OES)

I. Background Information

A. Date, Time of inspection: Monday, May 13, 2013, 0800 Hrs

B. Weather Conditions: Sunny, approximately 55 degrees F

C. USEPA Representatives: Todd Borci
Erin Trainor

D. Site Representative: Paul Jessel, Supervisor of Water and Wastwater
City of Haverhill
Water and Wastewater Department
4 Summer Street, Haverhill, MA 01830
Phone: (978) 374-2382

E. Address: Various locations within the City of Haverhill, Massachusetts

II. Purpose of Inspection

The purpose of the inspection was to identify illicit connections or illegal discharges within the City of Haverhill Municipal Separate Stormwater Sewer System (MS4) that may adversely impact the water quality in the Merrimack River or its tributaries, including the Little River. Samples were collected from four (4) stormwater outfalls, and one (1) stream segment of the Merrimack River in accordance with the Environmental Investigations and Analysis (EIA) unit Stormwater Program Plan.

III. Description of Sampling Locations

- Stormwater outfall identified as location BWOOD1 located along Buttonwood river trail approximately across Water Street from the Haverhill Historical Society
- Merrimack River sample collected approximately 50 upstream of BWOOD1 identified as location MR01
- Stormwater outfall located on the north side of the river approximately across from Bethany Ave identified as location Beth1
- Approximately 12" diameter stormwater outfall located adjacent to Cashman Field off of Hilldale Ave. identified as location Cash01
- Approximately 24" stormwater outfall located adjacent to Cashman Field off of Hilldale Ave. identified as location Cash02

IV. Inspection Observations and Findings

On Tuesday, May 13, 2013, EPA inspectors Todd Borci and Erin Trainor conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Haverhill MS4 at two (2) locations which discharge into the Merrimack River, two (2) locations that discharge into the Little River (a tributary of the Merrimack River), and one (1) sample from the Merrimack River downstream of downtown Haverhill.

The inspection started in Haverhill at approximately 0800 hrs. At the time of the inspection, the weather was sunny and approximately 55 degrees Fahrenheit. According to precipitation records for Lawrence Airport, approximately 0.7 inches of precipitation had occurred in the 24-hour period prior to the start of the inspection and 0.18 inches of precipitation had fallen in the 48-hour period prior to the inspection.

The City of Haverhill is covered under the 2003 General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). A copy the City of Haverhill Notice of Intent (NOI) has been posted online, and is dated July 8, 2003. The City of Haverhill EPA NPDES permit number is MAR041197.

Several sampling locations described in Section III were field screened using test kits for ammonia, chlorine, and surfactants, and analyzed at the EPA New England Regional Laboratory (NERL) for E.Coli, Enterococcus, and pharmaceutical and personal care products (PPCPs) including: Atenolol, Acetaminophen, Cotinine, 1,7-Dimethylxanthine, Caffeine, Carbamazepine, and Metoprolol. In-situ measurements for conductivity, salinity, and temperature were also recorded. Field test kits were not conducted on the Merrimack River grab sample ("MR01"). The following tables summarize the findings. Photographs are included. Laboratory results are anticipated to be available by the end of May 2013.

Attachments → Photographs

End of Report

Summary of Haverhill, MA MS4 Inspection, May 13, 2013

Sample ID	BWOOD1	MR01	Beth1	Cash01	Cash02
Time	0825	0830	0850	0930	0935
Description of Location	Outfall grab sample south of Water street across from Haverhill Historical Society	Merrimack River sample approx. 50 feet upstream of BWOOD1	Haverhill outfall sample –north flood wall – in line with Bethany Ave.	12” Outfall located south of Cashman Field on Hilldale Ave	24” outfall located south of Cashman Field on Hilldale Ave-adjacent to Cash01
Physical Observations	Orange coloring and bacterial growth.	Flowing downstream – clear.	Flow 5 gpm, some orange sed in pipe	Trickle flow, chemical odor, some algae growth in pipe.	20 gpm flow, chemical odor, brown foam in plunge pool.
Temperature, ºC	13.1	16.5	12	10.1	13.8
Specific Conductivity, uS	370	198.3	1745	650	637
Salinity, ppt	0.1	0.1	0.9	0.3	0.3
Ammonia, mg/l	0	NA	0	0	0.25
Total Chlorine, mg/l	0.02	NA	0.01	0.03	0.04
Detergent, mg/l	NA	NA	0.3	0.2	0.15

NA: Not analyzed
GPM: Gallon per minute

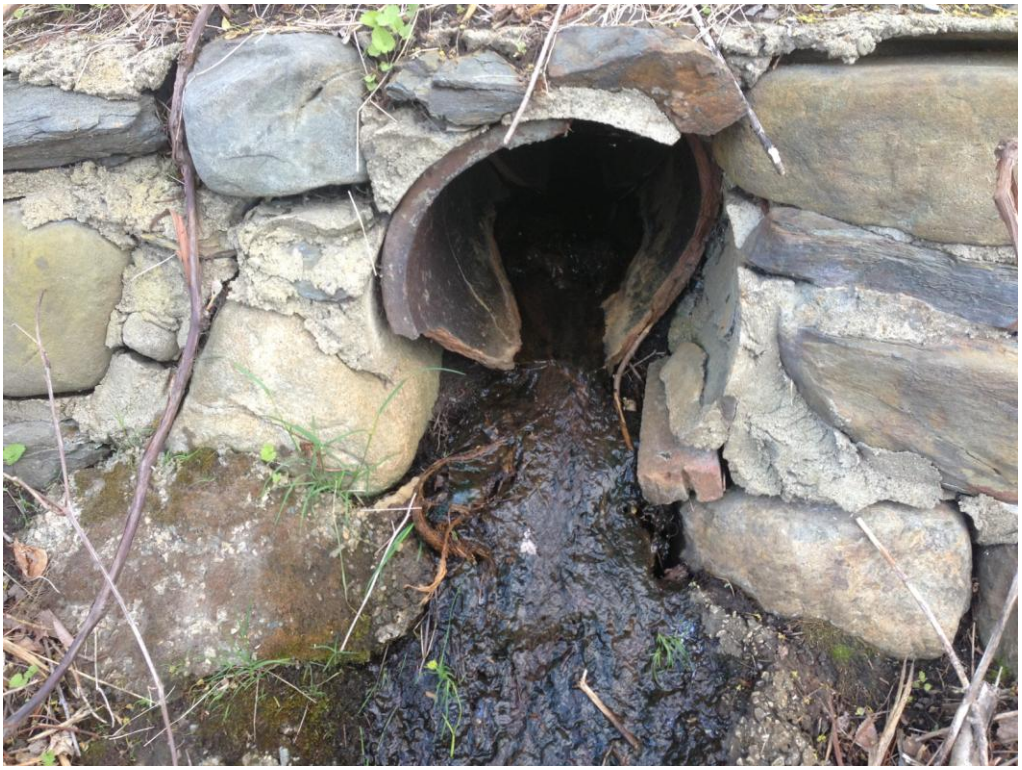


Photo 1: Outfall is location BWOOD1 – note bacterial/algae growth.

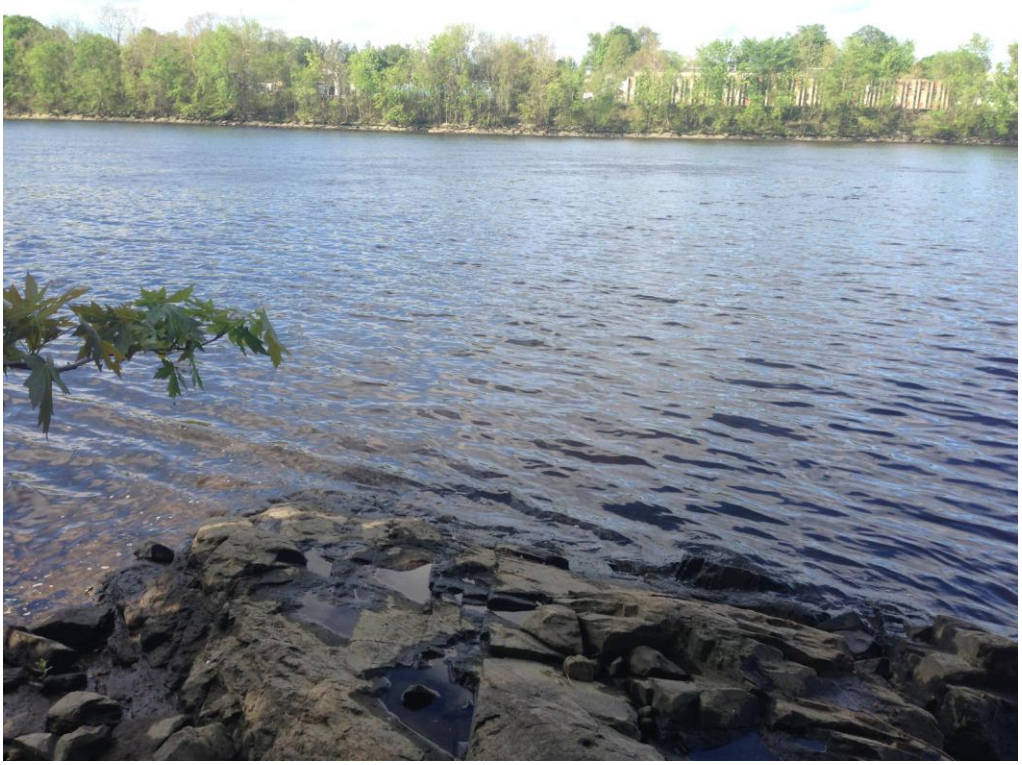


Photo 2: Location MR01 on north bank of Merrimack River approximately 50 feet upstream of BWOOD1.

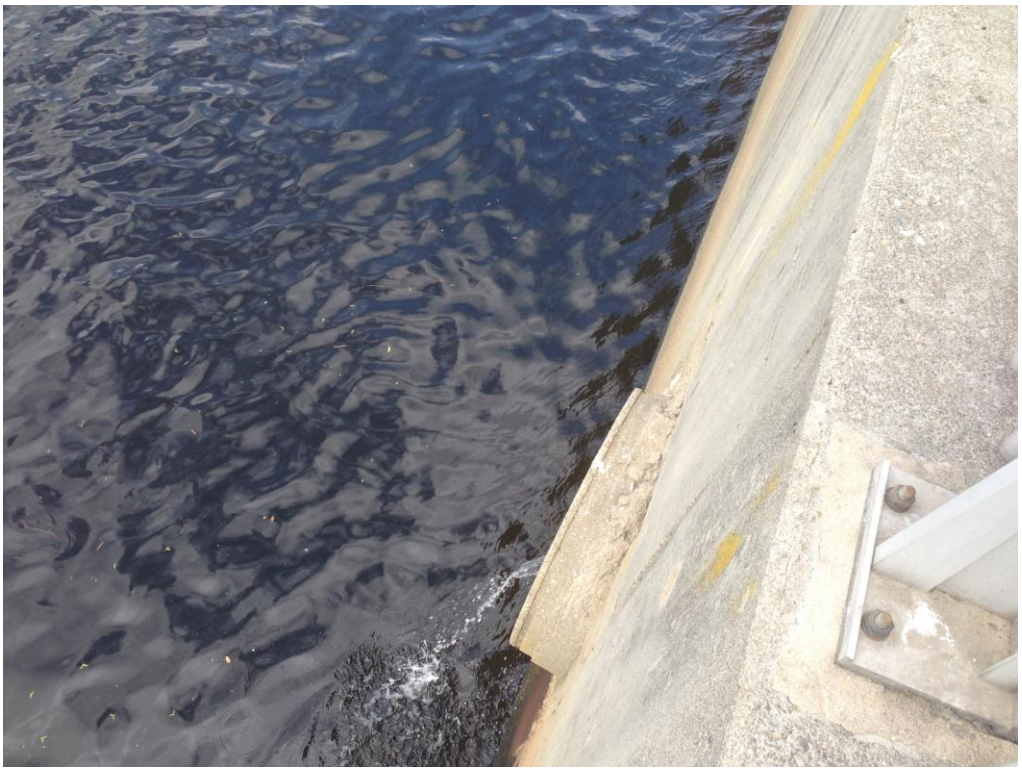


Photo 3: Sample location Beth1.

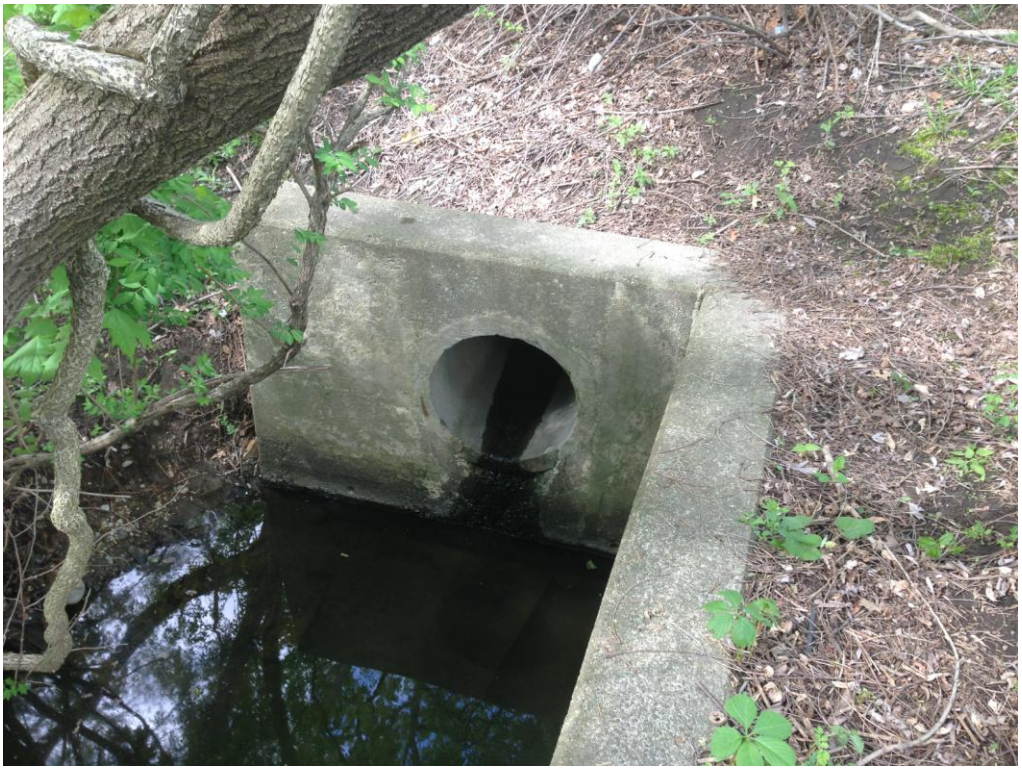


Photo 4: Location “Cash01” south of Cashman Field on Hilldale Ave.

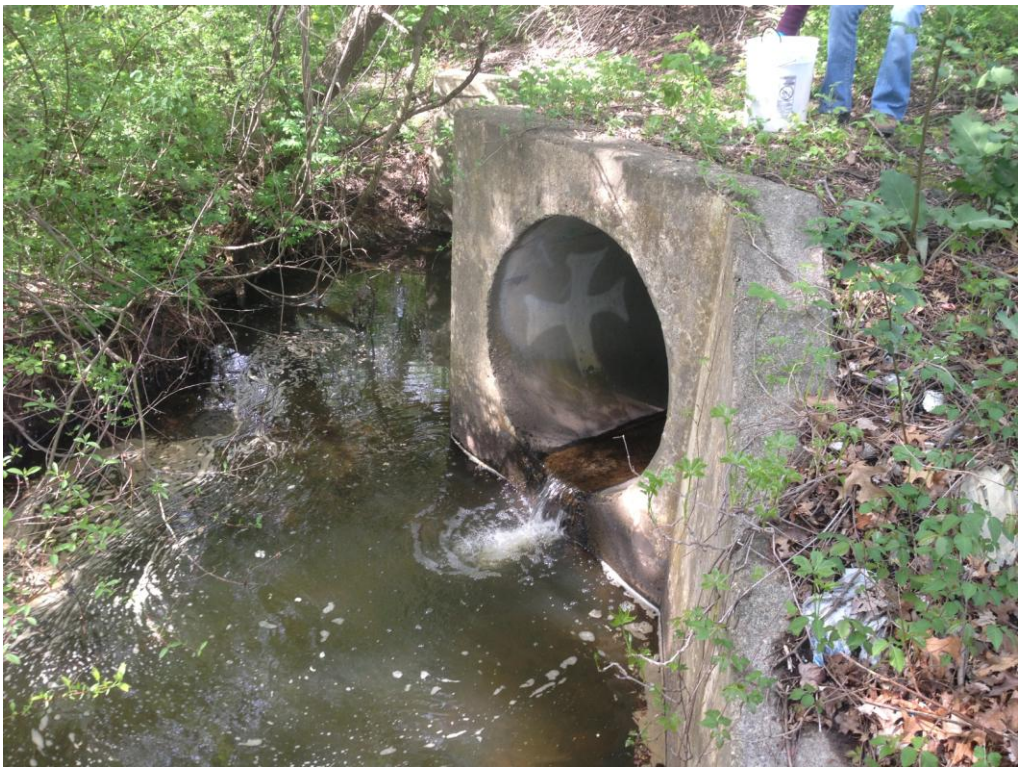


Photo 5: Location Cash02- south of Cashman Field on Hilldale Ave – Cash01 is obscured by the larger Cash02 outfall – note brown foam.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 10 April 2013

Subj: NPDES Compliance Inspection
Municipal Separate Storm Sewer System (MS4); NPDES Permit #MAR041197; and
Combined Sewer Overflows; NPDES Permit #MA0101621
City of Haverhill, MA

From: Todd Borci

To: File

On Monday, 8 April 2013, EPA inspector Todd Borci conducted an unannounced inspection of the City of Haverhill, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4") and Combined Sewer Overflow system at several locations throughout the City. The inspection was to determine Haverhill's compliance with its MS4 permit (MAR041197) and the CSO portion of its NPDES WWTP/CSO permit (MA0101621). Both permits have expired but are administratively continued. The first part of the inspection was timed to coincide with low tide along this portion of the Merrimack River, which was predicted to be at 7:46 am. River levels are still somewhat elevated with spring runoff. The nearest river gauge is upstream at the Lawrence, MA tailwater, which recorded a gauge height of approximately 12 feet.

EPA observed both MS4 and CSO outfalls throughout the City. EPA first observed locations just east of downtown Haverhill along Water Street that discharge along the north shore of the Merrimack River. EPA first observed CSO #010 near the intersection of Boardman and Water Streets, in addition to two nearby stormwater outfalls. EPA was unable to determine the stormwater outfall numbers from available mapping. River levels were below pipe inverts at this location and no discharges were observed.

EPA then observed CSO #013 near the intersection of Water Street and Groveland Street. The outfall was nearly completely submerged and EPA could not determine whether a discharge was occurring.

EPA then observed a number of stormwater outfalls to the Merrimack River on the south side of Water Street between approximately Buttonwoods and John Ward Streets. A concrete walkway exists along the river (structure appears to contain a sanitary sewer pipe based on the presence of sanitary sewer manholes). Several stormwater outfalls discharge from the hillside, where flow travels over the concrete walkway/sewer structure. No labels were observed on the outfalls and EPA was unable to determine outfall numbers from available mapping. One outfall, seen in Photo 5, was observed to be discharging approximately 0.5 gal/min with heavy orange bacterial growth observed in the outfall. This outfall should be flagged for further investigation and sampling.

EPA then traveled approximately 0.25 miles west of downtown Haverhill to observe CSO #024, which discharges to the north shore of the Merrimack River off of River Street. This is a large outfall structure (at least 6 feet in diameter). The outfall was approximately 1/3 submerged and EPA was unable to determine if any discharge was occurring. This section of the river has very steep banks and access to any shoreline or flood walls is very difficult. EPA traveled to the opposite side of the Merrimack and took Photo 8.

EPA then traveled along the south side of the Merrimack to South River Street to the Crescent Yacht Club. EPA observed CSO #036 which is located between two boat ramps at the yacht club. No discharge was observed, however just to the west of the outfall seepage was observed from the hillside behind the outfall, and EPA also observed at manhole structure that in poor shape (see Photos 9 and 13). EPA took several photos from the Crescent Yacht Club facing north across the Merrimack River of several outfalls (Photos 10, 11, and 12).

EPA then traveled to a location on the north side of the Merrimack River across from the Crescent Yacht Club to observe a discharging outfall (Photo 14). Based on available mapping, EPA believes this is outfall MR 1164. The outfall was discharging at approximately 5 gal/min. EPA could not determine if any bacterial growth or staining was present on the wall beneath the outfall. The entire north shore of the Merrimack River along this section and further west through downtown Haverhill consists of a very tall flood wall (Photo 15).

EPA then traveled north of downtown to an outfall location location depicted on available mapping as LR 0952. This outfall was found immediately south of Cashmans Field and Playground and discharges to the Little River. The outfall was observed to be discharging approximately 5 gal/min, with a significant chemical/sewage odor present. The discharge caused some suds and a brown foam to form in the receiving water. This outfall should be flagged for further investigation and sampling as some type of illicit discharge is suspected. EPA also observed a second outfall to the immediate southwest. A slight discharge was observed with some white suds in the receiving water beneath the outfall. Neither outfall was labeled.

EPA has a meeting scheduled with the City in the near future and will follow up on its observations either with the City, or with a Compliance Sampling Inspection depending on available resources.

End of Inspection.

Region 1, New England

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

May 21, 2013

Erin Trainor - EIA / OEME
US EPA New England R1

Project Number: 13050005
Project: Haverhill, MA MS4
Analysis: E. Coli Defined Substrate
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 05/07/2013

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method: Total Coliform/E. coli by Defined Substrate, Revision #2

If you have any questions please call me at 617-918-8609.

Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
Data Qualifier Codes

J = Estimate
H = Exceeds holding time
I = Exceeds incubation time
At = Atypical overgrowth
S = Lost sample
V = Insufficient sample volume
TNTC = Too numerous to count
MB = Media blank
+++ = Positive control
- - - = Negative control
SP = Spiked Sample
L = Estimated, result below reporting limit (RL)
ND = Not Detected, result less than RL
D = Lab Duplicate
P = Plate counts outside preferred range

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Haverhill, MA MS4

E. Coli Defined Substrate

Matrix: Water

Sample Number	Lab ID	Date of Collection		Date of Analysis		Compound	Concentration MPN/100 mL	RL MPN/100 mL	Qualifier
BETH 1	AB39103	05/07/13	9:30 am	05/07/13	2:10 pm	E. Coli Defined Substrate	**12**	4	
BWOOD 1	AB39101	05/07/13	8:45 am	05/07/13	2:10 pm	E. Coli Defined Substrate	ND	4	
CASH 01	AB39104	05/07/13	10:00 am	05/07/13	2:10 pm	E. Coli Defined Substrate	ND	4	
CASH 02	AB39105	05/07/13	10:18 am	05/07/13	2:10 pm	E. Coli Defined Substrate	**76**	4	
MR01	AB39102	05/07/13	8:50 am	05/07/13	2:10 pm	E. Coli Defined Substrate	**308**	4	

Number of Samples: 5

Region 1, New England

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

May 21, 2013

Erin Trainor - EIA / OEME
US EPA New England R1

Project Number: 13050005
Project: Haverhill, MA MS4
Analysis: Enterococcus in Water
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 05/07/2013

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method: Enterococcus by Defined Substrate, Revision #2

If you have any questions please call me at 617-918-8609.

Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
Data Qualifier Codes

J = Estimate
H = Exceeds holding time
I = Exceeds incubation time
At = Atypical overgrowth
S = Lost sample
V = Insufficient sample volume
TNTC = Too numerous to count
MB = Media blank
+++ = Positive control
- - - = Negative control
SP = Spiked Sample
L = Estimated, result below reporting limit (RL)
ND = Not Detected, result less than RL
D = Lab Duplicate
P = Plate counts outside preferred range

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Haverhill, MA MS4

Enterococcus in Water

Matrix: Water

Sample Number	Lab ID	Date of Collection	Date of Analysis	Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
BETH 1	AB39103	05/07/13 9:30 am	05/07/13 2:10 pm	Enterococcus in Water	**20**	10	
BWOOD 1	AB39101	05/07/13 8:45 am	05/07/13 2:10 pm	Enterococcus in Water	**10**	10	
CASH 01	AB39104	05/07/13 10:00 am	05/07/13 2:10 pm	Enterococcus in Water	**10**	10	
CASH 02	AB39105	05/07/13 10:18 am	05/07/13 2:10 pm	Enterococcus in Water	**10**	10	
MR01	AB39102	05/07/13 8:50 am	05/07/13 2:10 pm	Enterococcus in Water	ND	10	

Number of Samples: 5

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
13050005	Haverhill

SAMPLERS: *(Signature)* T. Boni

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CON-TAINERS	ecoli and entero						REMARKS
	5/7/13	0845		X	BWOOD1	1	X						
	"	0850		"	MR01	"	"						
	"	0930		"	Beth 1	"	"						
	"	1000		"	Cash 01	"	"						
	↓	1018		↓	Cash 02	↓	↓						

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
T. Boni	5/7/13 1345				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
		[illegible]	5/7/13 1345		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

1- 19219

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Haverhill, MA MS4

Enterococcus in Water

Matrix: Water

DRAFT DATA

Sample Number	Lab ID	Date of Collection		Date of Analysis		Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
BETH 01	AB39152	05/13/13	8:50 am	05/13/13	1:45 pm	Enterococcus in Water	**201**	10	
BWOOD1	AB39150	05/13/13	8:25 am	05/13/13	1:45 pm	Enterococcus in Water	**10**	10	
CASH 01	AB39153	05/13/13	9:30 am	05/13/13	1:45 pm	Enterococcus in Water	**10**	10	
CASH 02	AB39154	05/13/13	9:35 am	05/13/13	1:45 pm	Enterococcus in Water	**52**	10	
MR01	AB39151	05/13/13	8:30 am	05/13/13	1:45 pm	Enterococcus in Water	**52**	10	

Number of Samples: 5

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Haverhill, MA MS4

E. Coli Defined Substrate

Matrix: Water

DRAFT DATA

Sample Number	Lab ID	Date of Collection		Date of Analysis		Compound	Concentration MPN/100 mL	RL MPN/100 mL	Qualifier
BETH 01	AB39152	05/13/13	8:50 am	05/13/13	1:45 pm	E. Coli Defined Substrate	**354**	4	
BWOOD1	AB39150	05/13/13	8:25 am	05/13/13	1:45 pm	E. Coli Defined Substrate	ND	4	
CASH 01	AB39153	05/13/13	9:30 am	05/13/13	1:45 pm	E. Coli Defined Substrate	**16**	4	
CASH 02	AB39154	05/13/13	9:35 am	05/13/13	1:45 pm	E. Coli Defined Substrate	**124**	4	
MR01	AB39151	05/13/13	8:30 am	05/13/13	1:45 pm	E. Coli Defined Substrate	**568**	4	

Number of Samples: 5

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Lawrence, MA MS4

Enterococcus in Water

Matrix: Water

DRAFT DATA

Sample Number	Lab ID	Date of Collection	Date of Analysis	Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
SUTTON	0AB39155	05/13/13 11:00 am	05/13/13 1:45 pm	Enterococcus in Water	**10**	10	
SUTTON	0AB39156	05/13/13 11:20 am	05/13/13 1:45 pm	Enterococcus in Water	**10**	10	
SUTTON	0AB39158	05/13/13 11:50 am	05/13/13 1:45 pm	Enterococcus in Water	**10**	10	
SUTTON	0AB39159	05/13/13 12:20 pm	05/13/13 1:45 pm	Enterococcus in Water	ND	10	
SUTTON	0AB39160	05/13/13 12:00 am	05/13/13 1:45 pm	Enterococcus in Water	**10**	10	
SUTTON	0AB39157	05/13/13 11:30 am	05/13/13 1:45 pm	Enterococcus in Water	ND	10	

Number of Samples: 6

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Lawrence, MA MS4

E. Coli Defined Substrate

Matrix: Water

DRAFT DATA

Sample Number	Lab ID	Date of Collection	Date of Analysis	Compound	Concentration MPN/100 mL	RL MPN/100 mL	Qualifier
SUTTON	0AB39155	05/13/13 11:00 am	05/13/13 1:45 pm	E. Coli Defined Substrate	**12**	4	
SUTTON	0AB39156	05/13/13 11:20 am	05/13/13 1:45 pm	E. Coli Defined Substrate	**39**	4	
SUTTON	0AB39158	05/13/13 11:50 am	05/13/13 1:45 pm	E. Coli Defined Substrate	**25**	4	
SUTTON	0AB39159	05/13/13 12:20 pm	05/13/13 1:45 pm	E. Coli Defined Substrate	**30**	4	
SUTTON	0AB39160	05/13/13 12:00 am	05/13/13 1:45 pm	E. Coli Defined Substrate	**30**	4	
SUTTON	0AB39157	05/13/13 11:30 am	05/13/13 1:45 pm	E. Coli Defined Substrate	ND	4	

Number of Samples: 6

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

DATE: November 14, 2011

SUBJ: Hiller's Cove
Mattapoisett, MA

FROM: Erin Trainor, Inspector

TO: File

I. Background Information

A. Date, Time of inspection: Tuesday, October 11, 2011, 12:00 PM

B. Weather Conditions: Sunny, approximately 65 ºF

C. USEPA Representatives: Denny Dart
Erin Trainor

D. Site Representatives: Peter Newton
Bristol Engineering Advisors, Inc.
P.O. Box 1536
Mattapoisett, MA 02739

E. Address: Various locations along Hiller's Cove

II. Purpose of Inspection

The purpose of the inspection was to identify illicit connections or illegal discharges within tributaries of Hiller's Cove which may adversely impact the water quality.

III. Description of Sampling Locations

- Aucoot Road – Upstream: In-stream sample located on upstream side of bridge on Aucoot Road

- Aucoot Road – Catch Basin: Outfall located next to bridge on Aucoot Road
- Aucoot Road – Downstream: In-stream sample located on downstream side of bridge on Aucoot Road
- Aucoot Beach: In-stream sample located just before stream enters Hiller's Cove
- Aucoot Beach Culvert: In-stream sample located where stream daylights from under Aucoot Beach

Photos are included at the end of this document.

IV. Inspection Observations and Findings

The inspection started at approximately 12:00 PM. At the time of the inspection, the weather was sunny and approximately 65 degrees Fahrenheit.

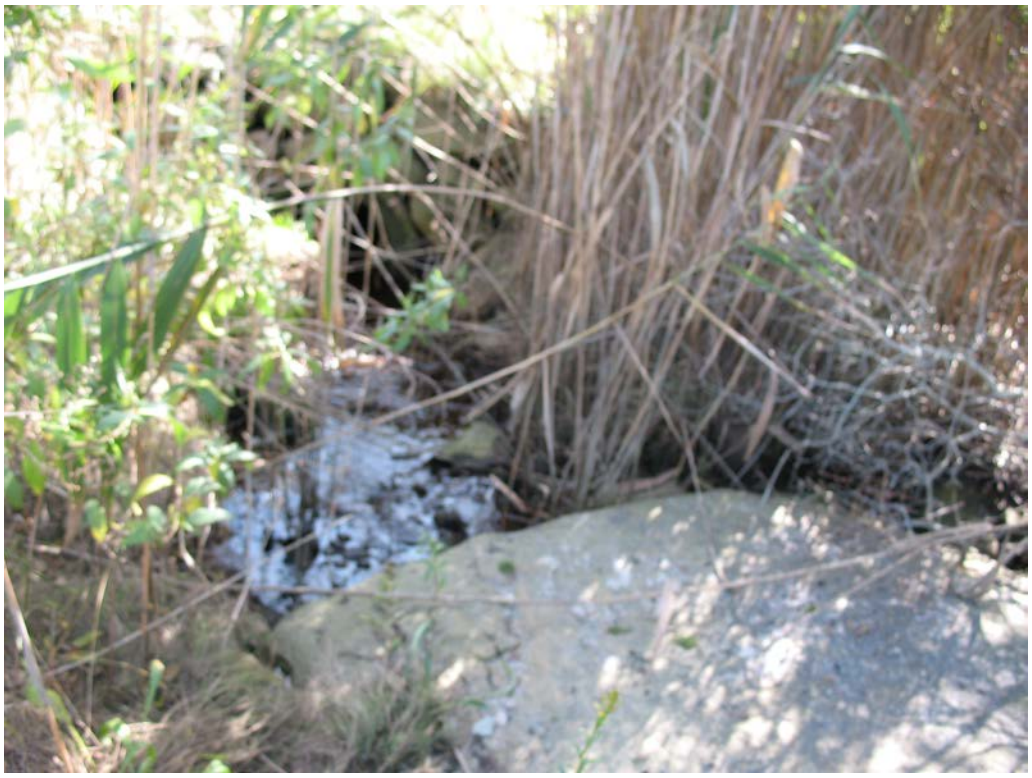
The Town of Mattapoisett is covered under the 2003 General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). A copy the Town of Mattapoisett Notice of Intent (NOI) has been posted online, and is dated June 30, 2003.

USEPA representatives met with Peter Newton of Bristol Engineering Advisors, Inc. to help determine sampling locations. Other onsite personnel were Bernadette Tabor of National Resources Conservation Service, and Michael Gagne, Town of Mattapoisett Administrator.

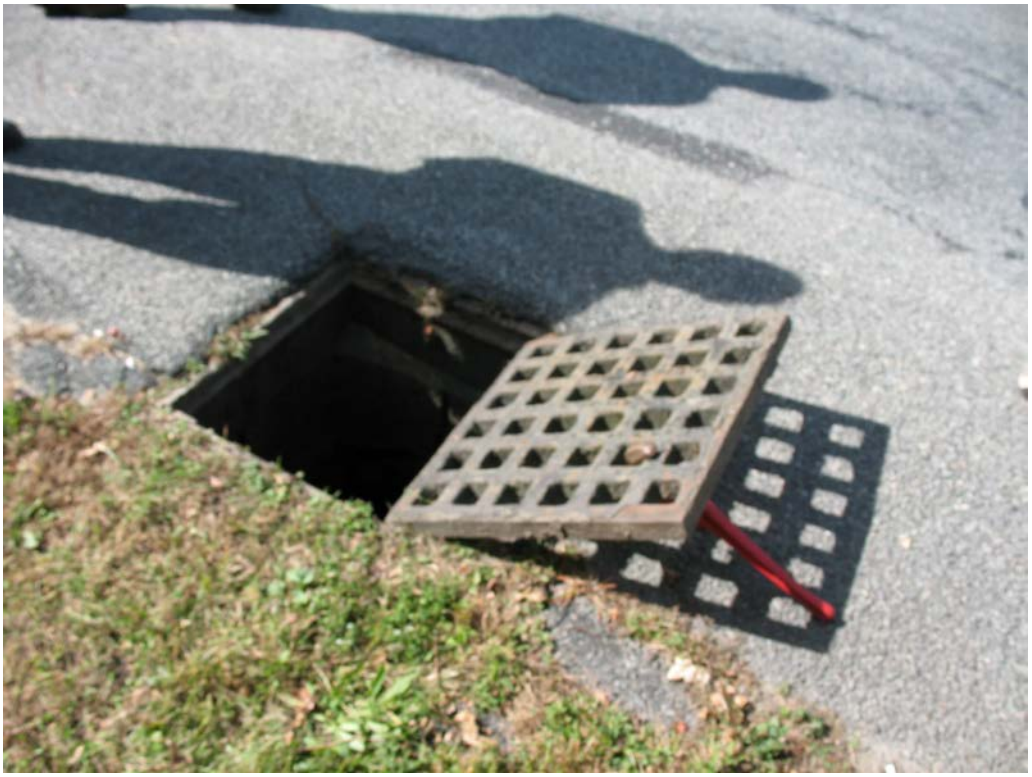
The sampling locations described in Section III were analyzed at the EPA New England Regional Laboratory (NERL) for E.Coli, Enterococcus, and pharmaceutical and personal care products (PPCPs) including: Atenolol, Acetaminophen, Cotinine, 1,7-Dimethylxanthine, Caffeine, Carbamazepine, and Sulfamethazine. In-situ measurements for conductivity, pH, and temperature were also recorded. Two of the five samples were screened in the field using test kits for ammonia, chlorine, and surfactants. The remaining three were not screened due to time constraints.

The following table summarizes the findings. E.Coli was detected above the water quality standard (>235 cfu/100mL) in four of the five samples collected: Aucoot Road – Upstream, Aucoot Road – Downstream, Aucoot Beach, and Aucoot Beach – Culvert.

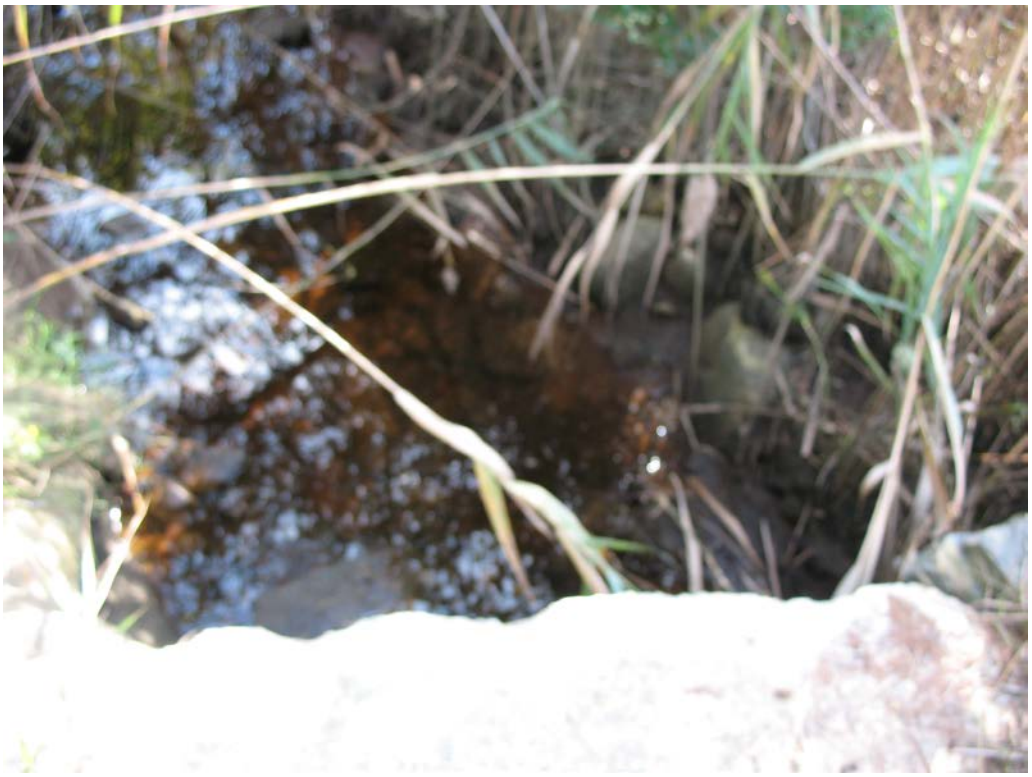
Sample ID	Aucoot Road - Upstream	Aucoot Road – Catch Basin	Aucoot Road - Downstream	Aucoot Beach	Aucoot Beach - Culvert
Town	Mattapoisett	Mattapoisett	Mattapoisett	Mattapoisett	Mattapoisett
Date	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011
Description	In-stream sample located on upstream side of bridge on Aucoot Road	Outfall located next to bridge on Aucoot Road	In-stream sample located on downstream side of bridge on Aucoot Road	In-stream sample located just before stream enters Hiller's Cove	In-stream sample located where stream daylights from under Aucoot Beach
Time	12:30	12:40	13:15	13:40	13:45
Notes	Low tide at 13:50	Low tide at 13:50	Low tide at 13:50	Low tide at 13:50	Low tide at 13:50
Temperature, °C	16.6	19.0	17.0	20.9	24.5
Specific Conductivity, µS	4227	850	3913	25.89 (mS)	17.33 (mS)
Salinity, ppt	1.6	0.3	2.1	15.8	10.2
Ammonia, mg/l	0	0	NA	NA	NA
Total Chlorine, mg/l	0.00	0.00	NA	NA	NA
Detergent, mg/l	0.25	<0.25	NA	NA	NA
E. Coli concentration, cfu/100ml	600	230	353	2,190	6,212
Enterococcus, cfu/100ml	ND	ND	ND	10	31
Fecal Coliform	428	340	424	820	960
Atenolol (ng/L)	ND	ND	ND	ND	ND
Acetaminophen (ng/L)	ND	ND	ND	ND	ND
Cotinine (ng/L)	0.41	2.6	ND	1.1	1.4
1,7-Dimethylxanthine (ng/L)	ND	ND	1.9	3.3	ND
Caffeine (ng/L)	ND	ND	ND	ND	ND
Carbamazepine (ng/L)	1.2	ND	2.2	ND	ND
Sulfamethazine (ng/L)	ND	ND	ND	ND	ND
Latitude/Longitude	41.66888641 N / 70.76320228 W	41.66892554 N/ 70.76293340 W	41.66876191 N/ 70.76309499 W	41.66759852 N/ 70.76192009 W	41.66770518 N/ 70.76286828 W



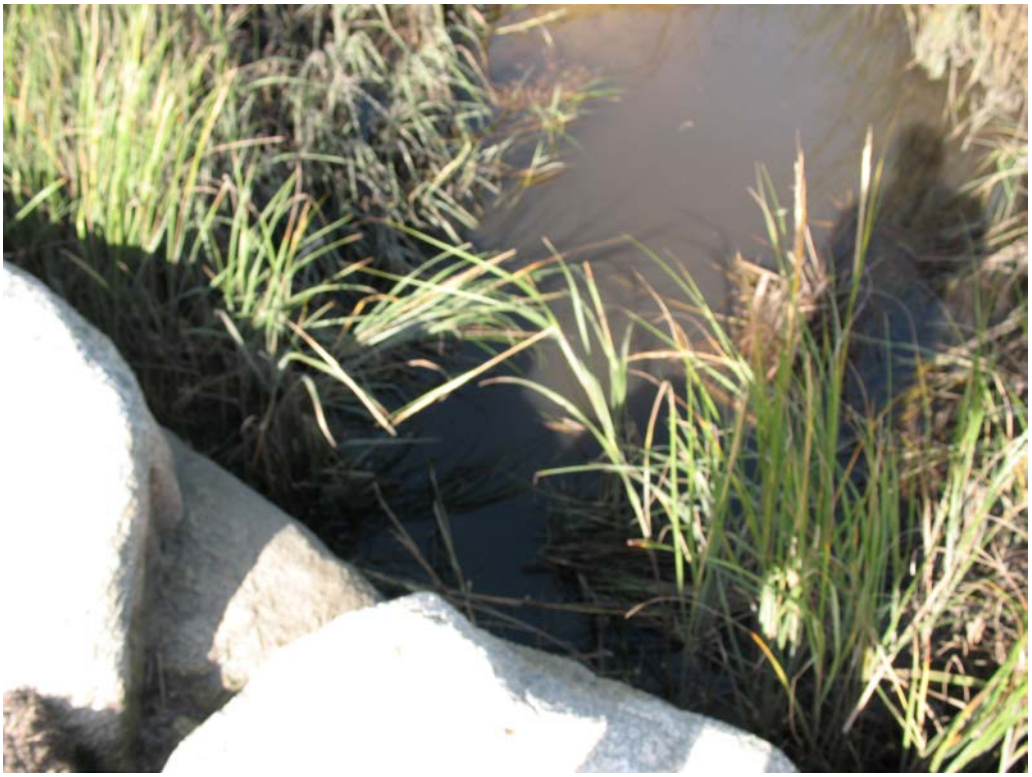
Aucoot Road – Upstream



Aucoot Road – Catch Basin



Aucoot Road – Upstream



Aucoot Beach - Culvert